DOCUMENT RESUME

ED 245 738 JC 840 355

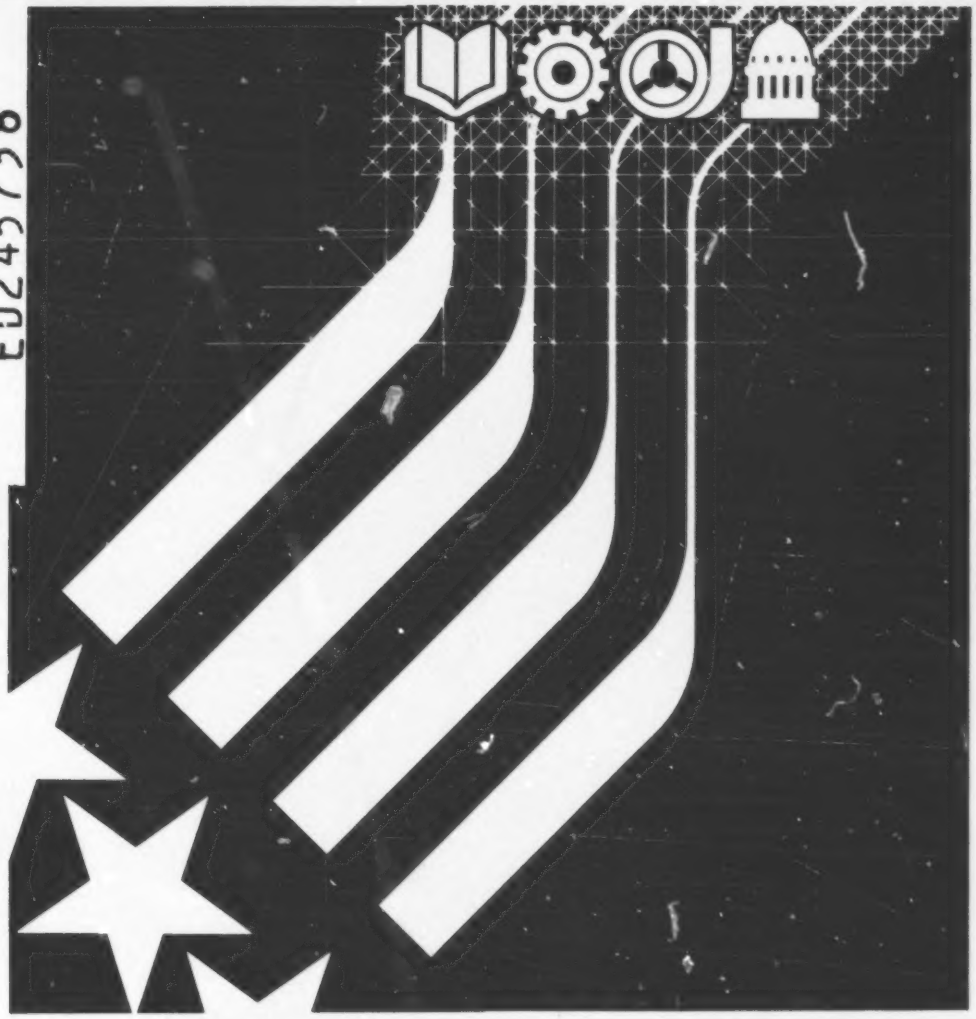
TITLE	Putting America Back to Work: The Kellogg Leadership Initiative. A Report and Guidebook.
INSTITUTION	American Association of Community and Junior Colleges, Washington, D.C.
SPONS AGENCY	Kellogg Foundation, Battle Creek, Mich.
REPORT NO	ISBN-0-87117-134-1
PUB DATE	Mar 84
NOTE	66p.
AVAILABLE FROM	American Association of Community and Junior Colleges, One Dupont Circle, N.W., Suite 410, Washington, DC 20036 ($8.50).
PUB TYPE	Reports - Descriptive (141) -- Guides - Non-Classroom Use (055)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*College Role; *Community Colleges; *Economic Climate; *Economic Development; *Employment Patterns; Labor Force; *Labor Force Development; *School Business Relationship; Two Year Colleges
IDENTIFIERS	*Putting America Back to Work

ABSTRACT

As part of the American Association of Community and Junior Colleges' Putting America Back to Work Project, this monograph examines the economic climate of the United States and the role of the community colleges in economic recovery. The first sections outline the origins and initial activities of the Putting America Back to Work Project, which was funded by the Kellogg Foundation to identify ways community colleges could contribute to economic recovery and introduce college resources to the leaders of private business and industry, organized labor, government, and national associations. The next sections describe the nation's economy and workforce, focusing on: (1) trends in unemployment, federal deficits, personal savings, industry operating levels, factory closings, inflation, mortgage delinquencies and foreclosures, business and bank failures, and personal bankruptcies; (2) factors affecting the American workforce, e.g., adult illiteracy, worker dislocation, and obstacles to retraining and relocation; (3) structural shifts in the economy caused by the shift from an industrial to an information-based economy, changes in jobs, the use of robots, and the decline of steel and other smokestack industries; and (4) the nature and availability of jobs. An extensive list of possible activities for community colleges to pursue in economic and human resource development is followed by information and recommendations concerning strategic planning for partnership building. An annotated bibliography is included. (AYC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED245738



JC 840 355

Putting America Back to Work: The Kellogg Leadership Initiative

A Report and Guidebook

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

W. Harper

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

American Association of Community and Junior Colleges

Putting America Back to Work: The Kellogg Leadership Initiative

A Report and Guidebook

Project Staff:

Nolen M. Ellison, President
Cuyahoga Community College
Cleveland, Ohio
Executive Director, Putting America Back to Work

Douglas C. Eadie
Project Consultant
Cuyahoga Community College

Patricia Hoover
Project Research Assistant
Cuyahoga Community College

Brenda Johnson
Project Office Manager
Cuyahoga Community College

James R. Mahoney
Project Research Assistant
American Association of Community and Junior Colleges
Editor

Dale Parnell
President
AACJC

William Meardy
Executive Director
ACCT

Supported by a grant from the W. K. Kellogg Foundation, Battle Creek, Michigan
March 1984

Copyright 1984: American Association of Community and Junior Colleges
One Dupont Circle, N.W., Suite 410
Washington, D.C. 20036
202/293-7050

ISBN 0-87117-134-1 Price: $8.50

Dale Parnell, Publisher

Table of Contents

Acknowledgements iv

Foreword v

Project Origins 1

Economic Backdrop 5

The Workforce 11

Structural Changes in the Economy 17

Jobs 23

The Place of Community, Technical, and Junior Colleges 27

Strategic Planning for Partnership-Building 35

Footnotes 47

Annotated Bibliography 51

Tables

1. Personal Income Saved, By Country 7
2. Inflation Indicators By Selected Items: 1967-1982 8
3. Projected Demographic Trends for 1982, 2000, 2010, & 2030, By Age 13
4. Employment and GNP Percentage Share of the U.S. Economy, By Sector 18
5. Projected Robot Applications in General Motors 19
6. Direct Job Creation in U.S. Due to Robotics, 1990 20
7. Employment and Employment Growth in the Fastest Growing Occupations: 1978-1990 24
8. American Electronics Association Projections—New Technicians Needed, 1983-87 25
9. Percentage of Job Changes, By Category, 1980-1990 26

Acknowledgements

Special thanks for the content of this monograph goes to the scores of leaders across the country—from the worlds of business, government, organized labor, and education—who visited with project staff and reacted to formal presentations made in various conferences, workshops, seminars, and colloquia, and to informal discussions on the issues. They, through their generous sharing of both time and materials, contributed greatly to our own understanding of how community, technical, and junior colleges might play an even more significant role in the realms of economic and human resource development.

Thanks, also, to Sylvia Forsythe and Mary Ann Settlemire, both of AACJC, who, on their own time, assisted with the editing of this text.

Foreword

As the United States struggled to recover from the deepest economic downturn since the Great Depression of the late 1930's, the American Association of Community and Junior Colleges formed a national Task Force to develop a policy paper on the role community, technical, and junior colleges could play in helping to restore the country to economic health. The Task Force was formed in June 1981 and issued its report in early 1982. Among other recommendations, the report called for a national commitment to economic development equivalent to the commitment made three decades earlier to science and math excellence that resulted in placing an American man on the moon. The report put community, technical, and junior colleges in the center of national economic recovery, identifying a range of activities that the colleges were already conducting that could be expanded greatly and suggesting additional efforts designed to take full advantage of this national resource.

The report was distributed at the 1982 AACJC annual convention and shared personally with officials from the W. K. Kellogg Foundation. Responding to the logic and significance of the report's recommendations and holding a long-term interest in the development of community colleges, Foundation officers encouraged the Association to prepare and submit a program application that would show how first steps might be taken to achieve the economic development "moon shot." In its application, AACJC proposed a sequence of activities aimed at identifying the contributions community colleges could make to national economic recovery. It also proposed a plan to introduce college resources to national, state, and local leaders of private business and industry, organized labor, government, and to the national associations that speak for these groups.

The Foundation approved the proposal in late 1982, and the project was begun. This monograph is one product of the one-year grant program. Its purpose is to provide the backdrop against which community college roles in economic development are highlighted and to offer suggestions on how strategic planning principles might be used to ensure that college contributions are most efficiently and effectively applied.

Since the beginning of the Putting America Back to Work program, some of the negative economic indicators that triggered it have either reversed their downward directions or their speed of decline has slowed. For example, the unemployment rate has steadily fallen since its height in December 1982; the inflation rate has declined; interest rates have fallen; industry investment in capital and human development has increased; and productivity rates have improved.

Many economists, however, suggest that these improvements may be only temporary, that in a year or two, America may find itself in another painful recession unless some serious adjustments are made in the economy. Economists state that three of the largest adjustments that must be made are: reduction of the federal deficit, improvement in the balance of payments, and positive modifications in the development of human resources to meet the changing needs of the marketplace.

In some direct and indirect ways, community, technical, and junior colleges can make significant contributions to the effort to continue the national recovery. The call to action sounded in Putting America Back to Work is still relevant and will continue to be so for the foreseeable future. Our insistence upon the crucial community college role in economic recovery is not rhetorical hoopla, touted only to promote our self interest. Colleges must recognize their own importance and we must all convince our partners in business, industry, organized labor, government, and professional associations that we are essential partners with them to achieve their own organizational objectives and the nation's objectives.

This monograph is another addition to the collection of publications produced by AACJC in the last two years on the theme of college involvement with economic growth. The second phase of the project, begun in mid-1983 with the assistance of a grant from HBJ Media Systems Corporation, will take this effort into more specific areas.

One of the Association's ultimate goals is to help influence the coordination of the extraordinary federal government resources that support human resource development. Our goal is to encourage the passage of a national human resource development policy, one in which community, technical, and junior colleges are given the high profile they deserve.

Dale Parnell
President
American Association of Community and Junior Colleges

Project Origins

In March 1982, a national community college Task Force issued "Putting America Back to Work," a concept paper that called for a "moon-shot" commitment to foster job development and training relevant to economic development. The Task Force was composed of representatives of the American Association of Community and Junior Colleges (AACJC) and the Association of Community College Trustees (ACCT). The concept paper enunciated five principles directed at the refinement and initiation of legislation affecting economic and human resource development. The principles are:

1. Incentives must be designed to promote greater cooperation between private/governmental employers and existing accredited educational/training institutions for the purpose of preparing citizens for careers of regional and/or national priority.

2. An administrative structure to allocate federal resources must be designed in a manner that provides greater state level determination of resource and/or incentive allocation, and promotes interstate planning for labor market areas as they transcend state boundaries.

3. Incentives must be designed to encourage citizens to seek preparation to qualify for occupations of regional and/or national priority, to be mobile, and to maintain their employment.

4. A national policy on employment development and training is required.

5. The currently fragmented authority and accountability for the federal job training programs must be clarified and unified. It is particularly important to pinpoint responsibility.[1]

The joint AACJC-ACCT Task Force moved to put these principles into action. It sought funding to support a project staff and secured it from the W. K. Kellogg Foundation in the fall of 1982. The grant launched phase one of the Putting America Back to Work project. The project, subtitled the Kellogg Leadership Initiative, had three objectives:

- To build a network of public and private sector organizations committed to the development of a comprehensive, coordinated approach to human resource development as a conscious tool for the nation's economic development. Such an approach will recognize the tremendous resource represented by the nation's community, technical, and junior college systems.

- To shape national strategies and policies relative to economic and human resource development so as to promote a closer tie between the two and to ensure a fuller use of all human resource development resources.

- To provide practical guidance and technical assistance to local two-year college systems in their economic development efforts.

Nolen M. Ellison, president of Cuyahoga Community College, Cleveland, Ohio, served as executive director of the Initiative during 1982-83, while on half-time institutional leave from the college.

The original Task Force concept paper recognized that the two-year college community could make the fullest contribution to economic development only in concert with other major actors in the complex and rapidly changing employment and training system. It also recognized that such "friendraising" would be no simple task, in light of both the traditional insularity of higher education and the diversity of interests represented. Finally, the paper indicated that the educational process worked both ways: If community colleges were to penetrate the consciousness of economic development policy makers, planners, and major institutional participants, they first had to raise their own consciousness about the dynamics at work in the employment and training environment.

The first step in the networking process was the identification of several national public and private organizations with which some kind of formal, systematic relationship appeared sensible in terms of AACJC's and ACCT's economic development objectives.

After preliminary research and the identification of a rough set of elements that might characterize a particular relationship, the Kellogg Initiative director and project staff personally visited one or more senior officers of each national organization. High priority was placed on the establishment of closer ties with the business community through such organizations as the National Alliance of Business, the Chamber of Commerce of the United States, the National Association of Manufacturers, the Committee for Economic Development, and the Business Roundtable.

Each contact was different in both approach and outcomes. Not only did the initial contacts highlight for each organization the value of two-year

colleges as a national resource (e.g., numbers and kinds of institutions and programs around the country), but they also:

- Took the first steps to establish a common economic development/employment and training vocabulary; and
- Led to the identification of next steps in relationship-building, including people to see and materials to collect and read.

In the case of national business organizations and such public associations as the International City Management Association, the League of Cities, and the National Governors' Association, the absence of a common vocabulary—much less a common frame of reference—was a barrier to communication that had to be overcome before any joint action could be considered. In every case, there was considerable openness regarding possible future collaboration. Perhaps one of the most important outcomes of these visits was the identification of ongoing research and policy formulation activities pertinent to the Putting America Back to Work effort. Establishing and strengthening formal ties to a wide variety of organizations at the national level continued throughout the year.

Networking and friendraising activities also included the dissemination of materials to a diverse audience and presentations at many forums. Program staff presented papers and formal testimony to the National Advisory Council on Vocational Education, the Committee on Education and Labor of the U.S. House of Representatives, the Subcommittee on Employment and Productivity of the U.S. Senate Committee on Labor and Human Resources, and the Finance and Appropriations Committee of the Ohio House of Representatives. Also, the staff prepared and delivered major papers at 14 conferences and meetings around the country.

Project staff were not surprised by what they found from these encounters. Rather, the findings confirmed their expectations. Here are two of these findings:

- The two-year college community does *not* loom large in the consciousness of almost all of the organizations with which contact was established—at least not as a primary economic development resource. To take two typical examples, the National Alliance of Business and National Governors' Association both point in their public literature to the secondary vocational education system as the preeminent vehicle for job training and retraining.

- The organizations were receptive to the idea of relationship-building and even eventually concrete partnerships for such purposes as lobbying for legislation. The questions were never "Why should we work together?" but, rather, "Around what issues?" and "How should we proceed with alliance-building?"

The Initiative was only one step—but a significant one—in the continuing process of ensuring that the nation's community, technical, and junior colleges are recognized as one of the most powerful economic development tools available to the nation and that the tremendous human and capital investment represented by the 1,219 institutions throughout the country is fully used in the rebuilding effort.

Cuyahoga Community College, Unified Technologies Center,
Cleveland, Ohio
(Architect's Rendering)

Economic Backdrop

The Putting America Back to Work project emerged in the middle of the most severe national economic recession since the Great Depression. Some of the indicators that demonstrate the severity of the recession are:

Unemployment

In December 1982, 10.8 percent of the civilian workforce was unemployed, for a total of approximately 12 million people. Another 5 million people were working fewer hours than they would have liked, and an additional million or more individuals were so discouraged by their inability to find work that they had given up the effort. The December figure was the highest unemployment rate in nearly 5 decades.

26.5 Million Unemployed

During 1982, 26.5 million workers were unemployed at some time during the year, with 22.0 percent of the total workforce unemployed during the year—a record rate. Hardest hit were black workers, one third of whom experienced unemployment at some time during the year; 27.1 percent of Hispanic workers were out of work at some time during the period.[2]

Contrary to popular belief, not all persons who are unemployed receive benefits. In July 1983, for example, only 38.6 percent of the 10.7 million unemployed workers were receiving unemployment benefits provided by state or federal sources. More than 6 million workers did not qualify for the benefits. In contrast, in 1975 between 65 and 69 percent of the unemployed (for the months of February, March, and April) received unemployment compensation. Some of the major reasons that explain the percentage differences are:

1. The length of the recession was nearly three years and it followed quickly after a shorter, less severe recession. As a result, many workers were not able to work the required "base period" to qualify for unemployment after they had received their full payments in an earlier unemployment period.

2. Tighter federal policies made it more difficult for states to qualify for the extended benefits program allowed by the law.

While the impact of these numbers on workers was severe, it was not as severe as it might have been, for nearly half of the jobless were members of families in which at least one member was employed. One result of the conditions portrayed by these figures was that 34 million Americans were living in poverty—15 percent of the population—the highest in nearly 20 years.[3]

Another critical consideration in the unemployment issue is its financial cost to state and federal governments, and its impact on other economic factors.

> Current estimates suggest that as much as 30 percent of our current, precipitous drop in productivity results from underemployment and unemployment of human capital. In order to reduce inflation by 1 percent, we must throw one million people out of work for three years. Moreover, maintaining even one million unemployed people costs as much as $25 billion in federal budget deficits for a single year—roughly $10 billion in various support payments and $15 billion in lost revenues.[4]

Federal Deficits

$2 Trillion Debt

Federal deficits for the past three years have increased substantially. In 1981, the national deficit was $57.9 billion; in 1982, it was $110.7 billion; and in 1983, it was $195.4 billion. To accommodate these deficits, the federal government has had to borrow money and, like everyone else who borrows, the government has had to pay interest. Government interest payments on its loans have been: 1981—$95.6 billion; 1982—$117.4 billion; and 1983—$124.5 billion (estimated). By 1986, the total national debt could reach $2 trillion, requiring as much as $177 billion per year just to pay interest charges.

In at least two important ways, these deficits diminish the capacity of the economy to recover: They reduce the spending capacity of the federal government, one of the primary users of gross national product, and they severely limit the amount of money available to private investors who need loans for expansion, improvement, and new ventures.

The sequential chain created by large federal deficits includes the following links: They tend to squeeze out the private sector from the total credit pool, a squeeze that can lead to higher interest rates; higher interest rates threaten an economic slowdown and keep unemployment high; that, in turn, reduces consumer spending and contributes to slowdown.

Annual Deficits Near $200 Billion

The government's response can take two channels: higher taxes to generate more dollars for the federal budget or significant budget cuts—or both. None of the options is attractive to the Congress or the President, for they would be unpopular actions with the voters. Budget deficits of between $150 and $200 billion over the next few years could absorb as much as 50 to 67 percent of the net household, business, and state and local government savings, thus leaving very little for the private sector to borrow and invest.[5]

Personal Savings

Individual savings behavior has changed dramatically since the mid-1970's. Personal savings accounts are one important source of money to support economic growth. In 1974, Americans saved approximately 8.8 percent of their income. In 1980, they saved only 5.9 percent, the lowest average among all industrial countries. Comparative savings for 1978 are shown in Table 1 below.

Table 1

PERSONAL INCOME SAVED, BY COUNTRY[6]	
Country	**Percent of Personal Income Saved—1978**
Japan	22.5
France	18.0
Germany	15.0
United Kingdom	14.5
United States	6.0

Industry Operating Level

Capital spending does not pick up until industry is running at 83 percent of its capacity, a level industry is not expected to reach in the 1980's.[7]

In September 1981 industry in the U.S. was operating at only 69.1 percent of its capacity. But in the intervening months, the percentage has increased. For example, in May 1983, the percentage was 72.0 and in July 1983, the rate was 75.8 percent. Increases in plant operating levels were led by the auto industry (at 77.3 percent, the highest in 4 years) and the iron and steel industries (up to 61 percent from a low in 1982 of 38.8 percent). According to the Department of Commerce, some of the improvement is due to plant closings that reduced the total production capacity of certain industries.[8] At the height of the Vietnam War, the factory operating rate was at 91.6 percent of capacity.

Factory Closings

Approximately 215,000 workers were thrown out of employment in 1982 as a result of the closing of more than 600 plants and factories across the

country. The Southeast was hit hardest with 169 plants shutting down. North Carolina topped the list of affected states—61 factories closed their doors during the year. Vermont and South Dakota were the only states without a plant shutdown.[9]

Inflation

Since 1967, consumer prices have risen by 180 percent on the average. The cost of some goods and services has escalated far above the average. Table 2 presents examples of the rising cost of 5 items.

Table 2

INFLATION INDICATORS BY SELECTED ITEMS: 1967/1982[10]			
Item	**Cost/1967**	**Cost/1982**	**% Change**
A Four-Bedroom Suburban Home	$39,000	$120,000	208 +
Loaf of Pepperidge Farm Bread	$ 0.39	$ 0.89	187 +
Hospital Room	$ 20.00	$ 117.00	485 +
Two-Piece Suit	$145.00	$ 320.00	121 +
Gallon of Gasoline	$ 0.33	$ 1.29	291 +

Mortgage Delinquencies and Foreclosures

For the first three months of 1983, 1.3 million home loans were delinquent by one or more months, a rate of 5.84 percent. Foreclosures in the first quarter of 1983 were at a record 0.71 percent or 143,000 of the more than 8 million home loans surveyed for the report issued by the Mortgage Bankers Association.[11]

Business Failures

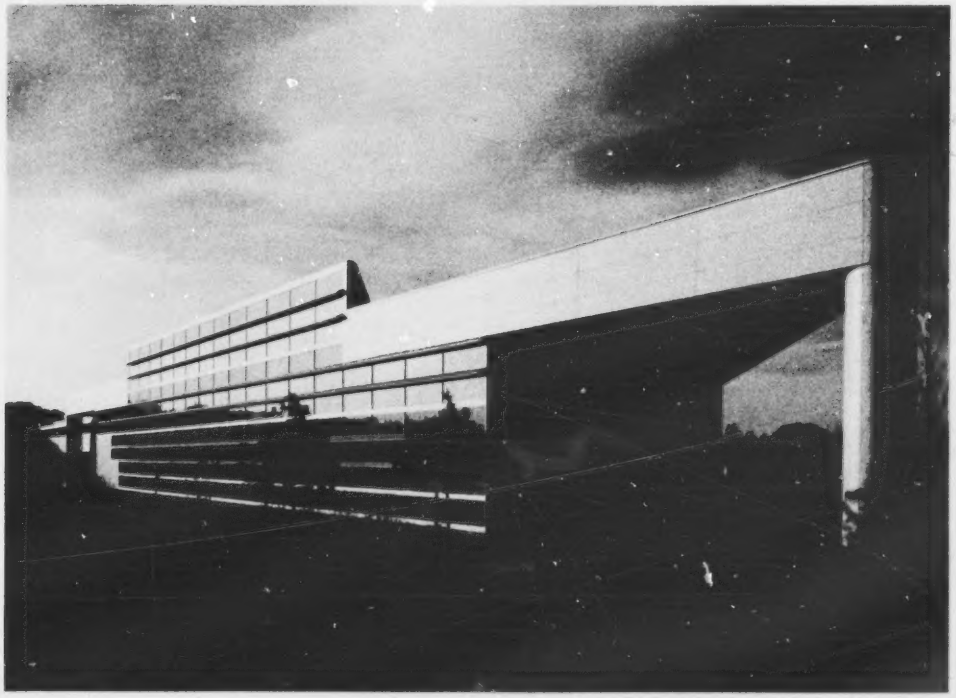
Business failures numbered 7,564 in 1979 and more than quadrupled in 1980 to 31,334. The sharp increase was due in part to the passage of a more lenient federal bankruptcy law and to a weak economy. Also, failures increased because of the expanded numbers of high-risk firms that opened their doors (computer-related companies, for example) and the consolidation of mature firms (like the steel industry). Another factor aggravating the acceleration of business failures is the strong competition from foreign firms.[12]

Personal Bankruptcies

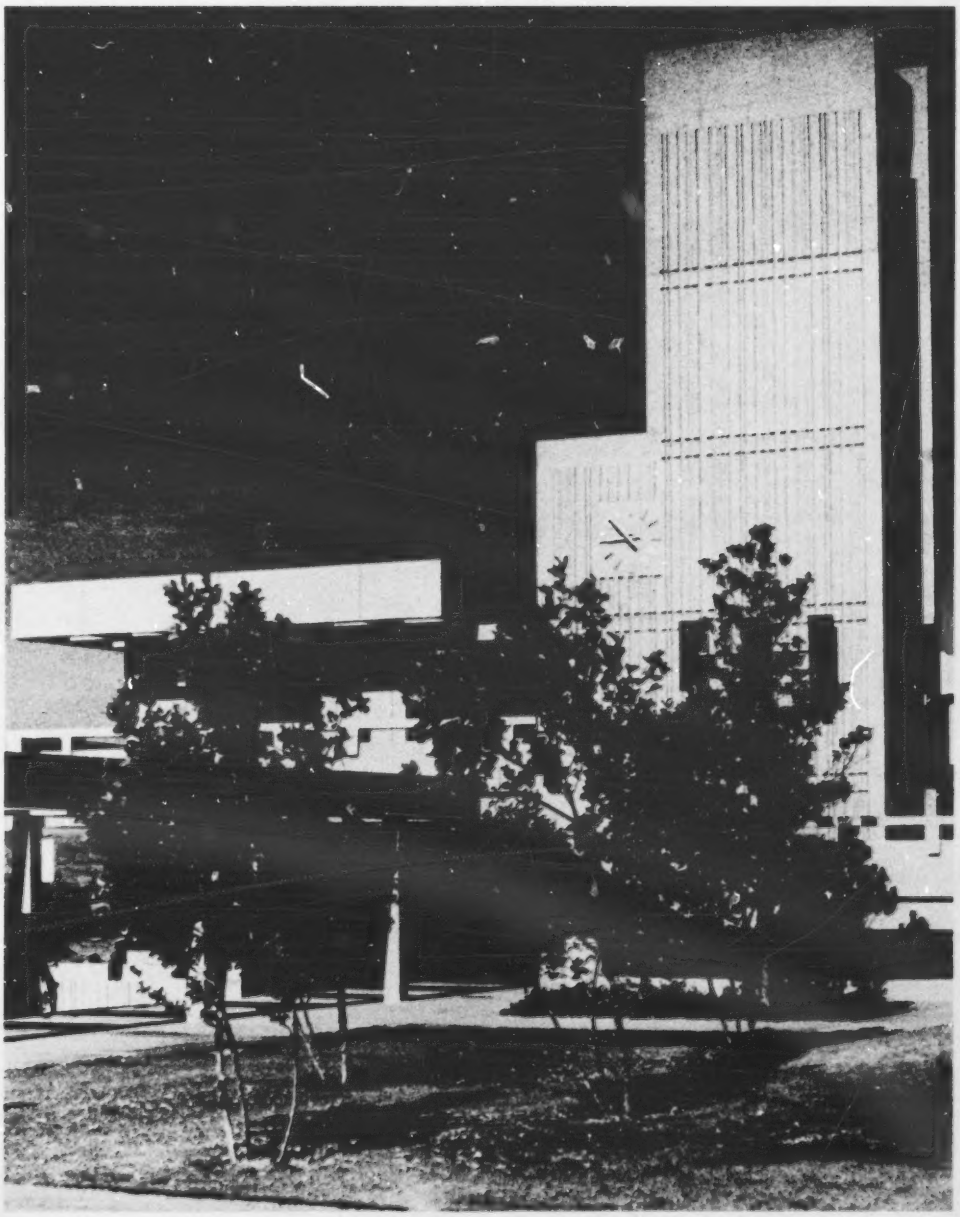
On top of business failures, personal bankruptcies also ran far above those of previous years. In 1979, for example, 228,532 persons filed for bankruptcy in the U.S. In 1982, the number nearly doubled to 452,890.[13]

Bank Failures

The Federal Deposit Insurance Corporation reported that 42 commercial banks failed in 1982, more than in any other year since the Great Depression. In 1983, 48 banks failed, caused in part by widely fluctuating interest rates and the long recession. The largest number of bank failures occurred in 1939 when 60 banks had to close their doors.[14]



Oakland Community College, Auburn Heights Campus,
High Technology Center, Auburn Heights, Michigan



Crafton Hills College, Yucaipa, California

The Workforce

During the early 1980's, the American workforce was plagued by a number of serious problems. They included some of the following:

- From 1963 to 1975 the U.S. share of the world's skilled workers fell from 29 percent to 26 percent.[15]

- Between 1967 and 1978, the labor force grew 2.2 percent per year; from 1978 to 1990, it is expected to grow at the rate of 0.9 percent per year. Most of the new entrants into the workforce will be disadvantaged women and minorities, groups in which the current human capital deficit (skills, experience, training, etc.) is greatest. Women are expected to comprise approximately two-thirds of the new workers during this period.[16]

- Shortages of certain skilled workers are expected in this decade, including 250,000 machinists and 140,000 paraprofessional technicians in electronics industries.[17]

Adult Illiteracy

- The U.S. Department of Education reports that 23 million American adults (one in five) lack reading and writing ability adequate to meet the demands of daily living, while 40 million more adults are only marginally capable of being productive workers and citizens. Further, according to the U.S. Bureau of the Census, 45 million people 16 years old or older are not in school and do not have a high school diploma; approximately 850,000 teenagers drop out of high school each year.[18] These numbers help to explain why, as one research group estimates, about 300 of America's largest companies conduct remedial math and English courses for entry-level workers. A 1982 Center for Public Resources study of over 2,000 corporations with 500 or more employees reported that 75 percent of these companies conducted some form of remedial education and basic skills competency program inhouse, most of them concentrating on math and speaking/listening skills-building. The study found that 50 percent of the medium-sized companies and 35 percent of the larger companies offered remedial training courses for their employees. A recent Conference Board study stated that 37 percent of the firms it tracks now provide remedial training in writing, reading, and arithmetic.[19]

- Ten percent of the civilian workforce suffers from alcoholism and 8 percent of federal workers are alcoholics.[20]

- 6 to 12 million illegal immigrants now live in the U.S., with the number growing at the rate of 250,000 to 500,000 per year. Many of them hold jobs that Americans would enjoy having and some of them are well-paying jobs. Many immigrants and refugees are illiterate in English and in their native languages.[21]

- The American population is aging, a fact that is both a benefit and a liability for the workforce. Projections on the gradual aging of the population are presented in Table 3 on the next page. The bad news in these numbers is that employers will have to choose from among the least well-trained and least experienced new entrants in the workforce (minorities and women), a need that will tend to depress productivity. The good news is that the most productive worker cohort (ages 25-54) will increase significantly, thus contributing to improvements in productivity.

  As of July 1983, the civilian labor force numbered 111.9 million. In 1990 it is expected to total approximately 125 million individuals.

Worker Dislocation

- Changes in the economy have created a whole new cadre of workers for which the term "dislocated workers" has been applied. According to the Congressional Budget Office (CBO), a dislocated worker is one who has lost work through no fault of his/her own. Usually, the job itself has been eliminated because of a plant shutdown, because of a retooling with technologically new, labor-saving equipment, or for any number of other reasons generated by structural changes in the economy.

  Precise numbers of dislocated workers in any period are not available, but in a 1982 study the CBO estimated that the number in 1983 would range from 100,000 to 2.1 million—that is, from about 1 percent of all unemployed workers to 20 percent. The lower range included only workers who were displaced from declining industries (textile, steel, automotive, primary metals, construction, apparel, lumbering) and who remained jobless for longer than 26 weeks. At the higher range, all unemployed workers in declining geographic areas were included. CBO projected that about half of these would be blue-collar workers, but nearly 25 percent would be managerial, sales, and clerical workers.[23]

  Analysts have projected that automation could eliminate 200,000 manufacturing jobs in the automobile industry by 1985. CBO

Table 3

PROJECTED DEMOGRAPHIC TRENDS FOR 1982, 2000, 2010, & 2030, BY AGE[22]

	1982	2000	2010	2030
Number of persons (in thousands and as percent of total)	231,964 (100.0)	266,496 (100.0)	281,732 (100.0)	307,340 (100.0)
18 to 24 years	29,804 (12.8)	24,882 (9.3)	28,629 (10.1)	28,771 (9.3)
25 to 34 years	39,416 (16.9)	35,783 (13.4)	37,605 (13.3)	38,715 (12.5)
35 to 54 years	51,570 (22.2)	79,177 (29.7)	77,160 (27.3)	77,651 (25.2)
55 years or over	48,334 (20.8)	56,270 (21.1)	69,184 (24.5)	88,100 28.6)
55 to 64 years	22,141 (9.5)	23,824 (8.9)	33,760 (11.9)	32,236 (10.4)
65 to 74 years	15,756 (6.7)	17,283 (6.4)	19,586 (6.9)	31,561 (10.2)
75 years or over	10,435 (4.4)	15,162 (5.6)	15,837 (5.6)	24,302 (7.9)
Median age (in years)	30.7	35.5	36.6	38.0
Life expectancy (in years)				
At birth:				
Men	69.8	72.9	73.4	74.2
Women	77.7	81.1	81.6	82.6
At age 65:				
Men	14.3	15.8	16.1	16.7
Women	18.7	21.1	21.6	22.4

Data are for 1980.
Sources: Bureau of the Census, "True Level Population Projections" (1977) and Social Security Administration, *Social Security Area Populations, 1981.*

estimates that productivity improvements will reduce the workforce of integrated steel producers by 2 or 3 percent each year through 1990. Industrial robots could eliminate 1 to 3 million jobs in the near future and possibly up to 7 million by the year 2000, according to some recent studies. The proliferation of microelectronic technology could cause the loss of 3 million jobs by the end of the decade—or 15 percent of the current manufacturing workforce.[24]

Given the speed at which innovation is being introduced in the economy, dislocation is not a quirk of present conditions. It may describe the plight of the workforce far into the future. It is more accurate to see this phenomenon not as one that is unique to this period, but rather as a "recurrent temporary condition in the career of the majority of workers."[25] Yet, experience shows that workers are not lining up to take advantage of retraining opportunities, nor are they willing to relocate to communities where jobs exist. Some of the reasons to explain workers' reluctance to participate or to relocate include:

Dislocation Recurrent For Most Workers

a. Friends have not done well through relocation.

b. They still harbor hopes of getting their old jobs back.

c. High-tech employers often do not pay as well as the auto or other traditional manufacturing industries. The wage issue is a particularly critical one. In a study of five cities affected by plant closings in the meatpacking industry, the proportion of workers who were reemployed one year after layoff ranged from 33 to 76 percent—depending on the condition of the local economy. On average, wages upon reemployment were 17 percent lower than wages at the previous job. An August 1975 survey of workers laid off between 1968 and 1973 from plants certified for Trade Adjustment Assistance showed that hourly wages at reemployment were 33 percent lower than the wages received at the former jobs.

d. They do not want to disrupt spouses' careers or children's schooling.

e. They are strongly attached to their present occupations.

f. Workers from smokestack industries spurn high-tech jobs as menial and demanding. A Battelle Memorial Institute official said: "The semi-skilled worker of the high-technology industry sits with a doily on her head, listens to the soap opera on the radio, and fiddles with a piece of wire. This is very different from the auto worker who bangs on a car."

g. Employers are reluctant to hire older workers.

h. Workers do not know where jobs exists.

i. Workers have skills that are not generally transferable to other existing positions.

j. They are handicapped by "disabilities of affluence," i.e., they own homes.

k. They are reluctant to change a way of life they have established over the years.

Some results of worker reluctance to enter retraining programs or to relocate to areas where jobs exist are:

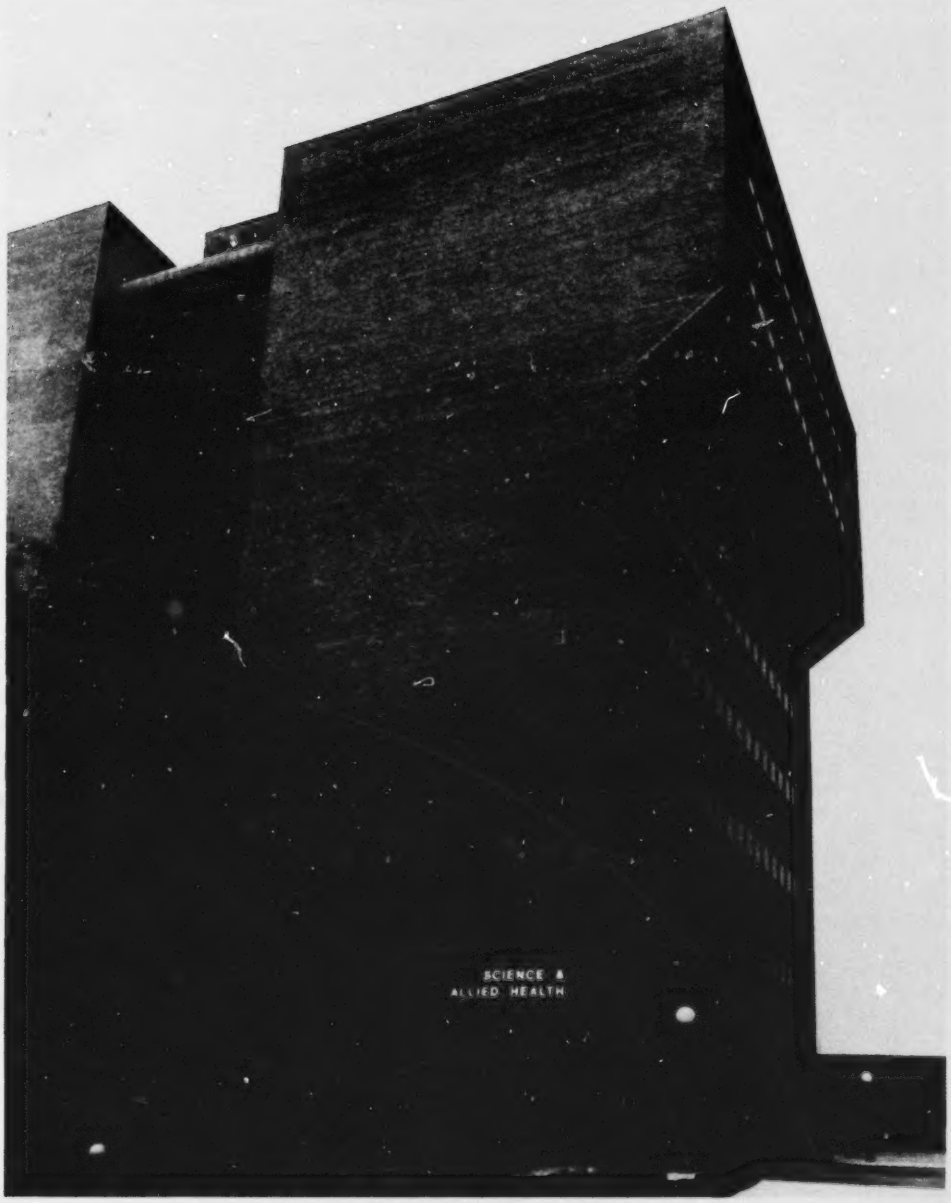
a. American firms can no longer rely on the mobility of the workforce to follow industry jobs where they exist, a reliance that has characterized the economy in the past.

b. Critical skills shortages exist in pockets throughout the country when such shortages may not exist on the national level.

c. Dislocated workers tend to be unemployed longer than they might be.

d. Extraordinary demands are put upon worker assistance programs.

e. New entrants into the workforce fill positions in relocated or new firms, a condition that tends to reduce productivity levels.[26]



Essex Community College, Science and Allied Health Building,
Baltimore County, Maryland

Structural Changes in the Economy

Industrial To Information Economy

Complicating the interplay of factors in the U.S. economy and contributing to the general upheaval in it are significant structural changes. It is nearly a cliché now to talk about the dramatic changes that have occurred in the U.S. economy over the past several years. Writers have characterized this change as one that has involved the evolution of an essentially industrial economy to an information or high-tech economy. For those who like to pin changed direction on one date, the year 1957 is a good one, for it was in that year that the number of white-collar workers in the labor force exceeded for the first time the number of blue-collar workers. The silicon chip catapulted the movement even farther ahead, and with the achievements of the U.S. space program, particularly the space shuttle projects and the launching of communications satellites, the transition took firm hold.

The new economy is an information economy because the majority of jobs in it are in information occupations, including lawyers, teachers, secretaries, computer programmers, nurses, medical technicians, reporters, and others. Currently, more than 60 percent of the American workforce is employed in information occupations.

Simple definitions may help distinguish between high-tech jobs, service jobs, and information occupations. Information jobs are those that involve the creation, processing, and distribution of information. High-tech jobs are those that require significant levels of scientific and mathematical training and experience. Service jobs are those that generally require no formal training and offer physical assistance to others, i.e., custodians, laundry and cleaning personnel, restaurant and hotel workers, among others.[27] Some of the specific changes that are taking place are noted in Table 4.

The drift in these numbers indicates significant elements of economic change, including movement from:

- blue-collar to white-collar (white-collar jobs outnumber blues by 5 to 3)
- manufacturing to service industries
- mass production, labor-intensive operations to high technology and robotics
- production to information industries

Table 4

EMPLOYMENT AND GNP PERCENTAGE SHARE OF THE U.S. ECONOMY BY SECTOR[28]			
Employment	1948	1961	1976
Agriculture	10.8	6.9	4.2
Industry	43.2	38.6	35.1
Service	46.0	54.5	60.7
GNP			
Agriculture	9.84	4.2	3.1
Industry	46.8	45.0	41.2
Service	43.9	50.8	55.7

These changes have been produced by fluctuating consumer preferences, advancing technology, and the growing competitiveness of other countries, as well as the advancing interconnectedness of the world economy.

Job Change

The drift is expected to continue, accelerated in part by the rapid speed with which innovation and development are introduced in the economy. Evidence of this rapid innovation was reported in one recent study. The study indicated that over a five-year period about 10 percent of the labor force underwent one or more changes in machine technology. The study reported that an additional 12 percent of the workforce experienced a machine change as a result of a job change not caused by a change in technology. The study concludes that technological advances changed 2 to 3 percent of all jobs annually, a rate that translates to 1.5 to 2 million workers in the U.S. economy each year.[29]

An estimated 90 percent of all our scientific knowledge has been created in the last 30 years. It is expected to double in the next 2 to 5 years. The application of technological innovation to commerical processes and operations once took 15 years—it now makes about 3 years. On average, about 10.5 percent of the workforce (11,000,000 individuals) is expected to change occupations in the course of a year. Now, workers change jobs more than 10 times in their lives on the average.

The printing and publishing industry offers a dramatic example of the impact of technology on jobs. The U.S. Department of Labor found that, with the introduction of high-speed phototypesetting machines, video display terminals, and electronic scanners, the total number of typesetters (40 percent of all craftworkers—about 300,000 workers) required by the industry is expected to decline by 25 percent by 1990. Between 1960 and 1981, the annual rate of employment increase was 1.5 percent, while output averaged 3.4 percent during the same period—an index of the effectiveness of new technology.[30]

Robots

The robot issue deserves special treatment because of the misconceptions related to it. Two misconceptions are that there is only so much work to be done in the economy, and that the economy is static. So, the argument follows, if new technology eliminates the need for some human workers, then those workers will be excluded from the workforce. In fact, new technology generally produces a higher productivity rate that, in turn, produces more jobs and new jobs. A recent Upjohn Institute study of the impact of robots makes the point. The Institute projects the growth of robot use in the General Motors Company as follows:

Table 5

PROJECTED ROBOT APPLICATIONS IN GENERAL MOTORS[31]		
Jobs	**Number in Use**	
	1980	1990
Welding (Arc and Spot)	138	2,700
Painting	47	1,500
Assembly	17	5,000
Machine Loading	68	4,000
Parts Transfer	32	8,000
Total	302	21,200

One robot replaces one worker per shift. For the Upjohn study, two-shift applications are assumed, so each robot will replace two workers. If 50,000 to 100,000 robots are put to work in the U.S. economy by 1990, then 100,000 to 200,000 jobs will be lost because of them—30,000 to 50,000 in the auto industry and 70,000 to 150,000 in other manufacturing industries. In absolute terms, these displacement numbers are frightening. But the Institute estimates

that the cumulative displacement rate caused by the use of robots for the decade 1980 to 1990 for all employment will be 0 to 1 percent; for the auto industry it will be 4 to 6 percent; and for all manufacturing it will be 0 to 1 percent. While robots are likely to eliminate 100,000 to 200,000 jobs, they will generate approximately 32,000 to 64,000 jobs, for a net loss of from 68,000 to 136,000 jobs. Table 6 below shows where the jobs will be created.

Table 6

DIRECT JOB CREATION IN U.S. DUE TO ROBOTICS, 1990[32]		
Area of Industry	**Employment**	
	Range of Estimate	
	Low	High
Robot Manufacturing	8,700	17,400
Direct Suppliers to Robot Manufacturers	8,091	16,182
Robot Systems Engineering	5,297	10,594
User Firms - Auto	3,000	5,000
User Firms - Other	7,000	15,000
Total	32,088	64,176

In addition to job creation, the case for robots includes the following points:

- A $50,000 robot that can last 6 to 7 years and replace a $21,000 salaried worker can pay for itself in 14 months if it works 2 shifts; if it works 3 shifts, it will pay for itself in less than a year.
- Robots tend to be more efficient; for example, a painting robot uses less paint than a human painter.
- Robots require no air conditioning, lighting, or special protection.
- The employment of robots can guard against periodic shortages of skilled workers.
- Robots can handle dirty, loud, unsafe, and routine work so that workers can be released to perform more creative and safe tasks.

The Institute report sums up its findings on the impact of robots on jobs with the statement:

> Robots in total will eliminate less than 1 percent of all jobs in this period (1980-1990). . . .robots will not have a significant direct impact on overall employment levels in the U.S. between now and 1990.[33]

Smokestack Industries

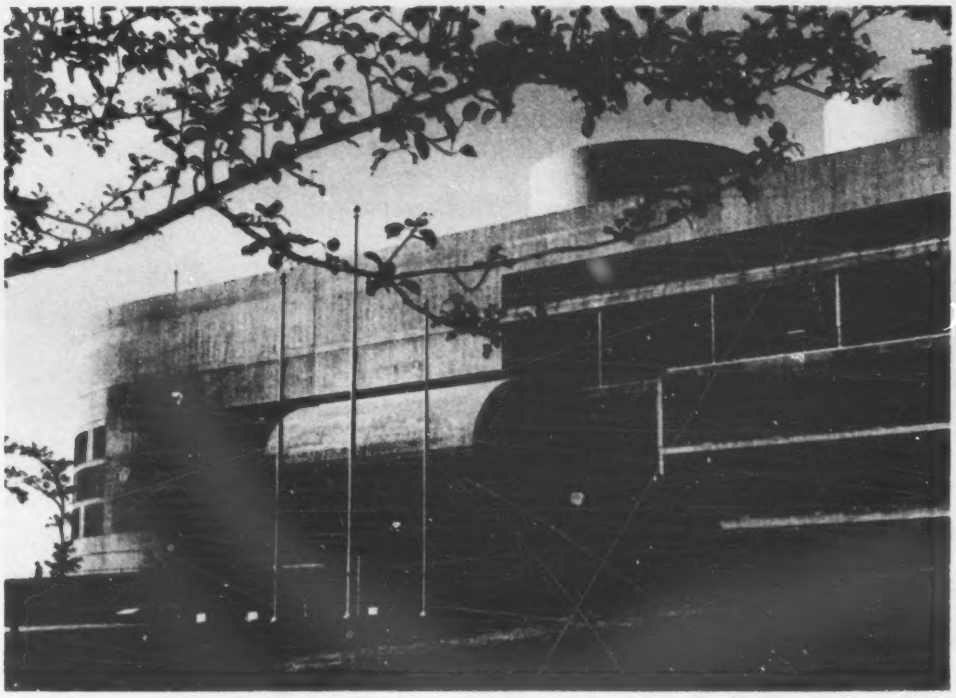
Probably more than any other industrial sector, the smokestack industries have been affected by the dramatic structural changes in the economy. Ideas about how to approach these industries vary widely. Some experts have suggested that they should be left alone to establish their vitality or to wither away and die and that the U.S. should purchase the products these industries once provided from nations that can produce them at much lower costs. Others argue that the most crucial of these industries should be selected out for special government nurturing, while those not chosen for assistance would be left to their own devices to survive—or not. Still others take the position that smokestack industries must be induced back to health, for they fuel the generation and development of new industries in the changing economy. Supporting the latter position, one industry leader said: "If you have service industries but lack a healthy agricultural or industrial economy, who are they going to serve?" What needs to be done, he said, is to make these industries more efficient, probably through automation and other high-tech applications. While such efficiencies will reduce the need for certain workers in the industries, other job opportunities will be opened through the establishment of new supply firms related to the core industry and other service positions created by the growth of the industry.

Steel

The steel industry is often presented as an example of the decline of American smokestack industries. Generally, the industry has been in decline for many years. In 1982, for example, the industry lost $2.8 billion in operations, and in 1983, the industry was operating at less than 60 percent of its capacity. Further, only 61.5 million tons of steel were shipped domestically in 1982, the lowest level in nearly 50 years.

Employment in the industry dropped from 400,000 in 1974 to 200,000 in 1983. Most of the 150,000 steelworkers unemployed in 1983 were not expected to get their jobs back. While U.S. steel production in 1973 was 157,099,000 net tons, it fell to 74,577,000 net tons in 1982. Further, steel imports to this country were 12.4 percent of the total used in 1973 and increased to 21.8 percent in 1982.[34]

There is, however, a segment of the steel industry in this country that is making money. Mini-mills, producing between 250,000 and 600,000 tons a year (as compared with the minimum of 1 million tons per year produced by large, integrated mills), are money-making enterprises that compete well in the international market. Mini-mills use a high-yield, continuous casting process, aim at markets within a 400-mile radius of the plant, and employ high technology and efficient machinery. The mini-mills concentrate on special products, avoiding the costly alloys and the large slabs and plates. These mills make up approximately one third of the industry right now. Productivity is high in the mills. One company executive reported that per-employee production averaged 850 tons a year in 1980, with expectations that the average will increase to 1,000 tons per year per worker. Japanese workers in the newest steel mills average 700-1,000 tons per year per employee, an average that is twice that of American steel workers in traditional factories.[35]



Community College of Rhode Island, Knight Campus,
Warwick, Rhode Island

Jobs

The remarkable changes in the economy are affecting the nature and availability of jobs. The Bureau of Labor Statistics (BLS) predicts that 20 to 23 million new jobs will be created in the economy between 1978 and 1990; 67 million jobs will be available during this period, with approximately 44 million of them open as the result of worker retirement, illness, death, and other causes.

Of the new jobs, the fastest growing in *relative terms* will be those in the high-tech occupations such as: business machine repairers, computer systems analysts, computer service technicians, computer operators, radiologic technologists, and several health-related positions such as dental assistants and hygenists, physical therapists, practical nurses, respiratory therapy workers, and others.

High Technology Defined

The BLS defines high-technology industries as those that spend double the national average on research and development and the number of technical employees in these industries runs twice as high as the average for all U.S. manufacturing. A congressional report defines high-tech industries as those that are labor intensive rather than capital intensive, employing a higher percentage of technicians, engineers, and scientists than other manufacturing companies; they are science-based; and their research and development activities are much more important to successful operations than is the case with other manufacturing concerns.[36]

Under these definitions, manufacturers of drugs, computers, electronic components, aircraft, and laboratory equipment qualify as high-tech enterprises. Computer programming, data processing, and research laboratories also qualify. Other groups of industries are classified as high-tech intensive, because their research and development expenditures and the number of their technical employees are above the national average. Under this expanded definition, the chemical and petroleum refining industries are included, as are manufacturers of textile, printing, electrical, and medical equipment.

High-tech occupations are projected to increase more than 100 percent between 1978 and 1990—more than 4 times the employment growth rate in all occupations.

However, the occupations that are expected to produce the *greatest number* of new jobs in the 12-year period are in lower skilled areas. The chart on the next page shows the differences between *absolute* and *relative* job growth projected for the near future.

Table 7

EMPLOYMENT AND EMPLOYMENT GROWTH IN THE FASTEST GROWING OCCUPATIONS: 1978-90[37]

Occupations	Employment 1,000s 1978	1990	% Increase	Number of Jobs 1,000s	% of all Occupations
Fastest relative growth[a]					
1. Data processing machine mechanics	63	156	148	93	0.4
2. Paralegal	28	66	132	38	0.2
3. Computer systems analysts	185	384	108	199	0.9
4. Computer operators	169	317	88	148	0.7
5. Office machine and cash register servicers	49	89	81	40	0.2
Total	494	1,012	105	518	2.4
Fastest absolute growth[b]					
1. Janitors and sextons	2,585	3,257	26	672	3.1
2. Nurses' aides and orderlies	1,089	1,683	55	594	2.7
3. Sales clerks	2,771	3,362	21	591	2.7
4. Cashiers	1,501	2,046	36	545	2.5
5. Waiters/Waitresses	1,539	2,071	35	532	2.4
Total	9,485	12,419	31	2,934	13.4
Totals for all occupations	97,610	119,590	23	21,980	100.0

a. Based on the percentage increase in the number of jobs created.
b. Based on the number of new jobs created.

Particular stress needs to be placed on this point because of the distortions sometimes created by high-tech enthusiasts—distortions that suggest there is going to be a great expansion of high-tech jobs in the immediate future and that anyone with good sense will begin training for them now. Further, the distortions could hoodwink educators to institute expensive training programs to prepare students for jobs that may not materialize.

High-Tech Jobs

To take another perspective on the issue, the U.S. Department of Labor (DOL) has classified 92 of the total of all industries (977) as high-tech or high-tech-intensive based on its standard industrial codes. In 1979, the total employment in these industries was approximately 3,000,000 workers. The DOL projects an increase of 850,000 jobs by 1990, but even with this impressive increase, employment in these industries will represent only 4 percent of the total nonagricultural labor force.

Further, the most jobs available in these industries in the next several years will be in nontechnical occupations. About one third of all new jobs will be for operatives; clerical and management occupations will make up about one fifth of the new jobs; other categories are engineers at 16 percent, craft workers at 14 percent, and engineering and science technicians at 10 percent.[38]

In more specific terms the American Electronics Association (AEA) projects that between 1983 and 1987 the electronics industry will need a significantly higher percentage of workers, particularly technicians, than it has today. It projects, for example, that 785 percent more robotics technicians will be needed, 201 percent more optics workers will be in demand, and 164 percent additional computer-assisted design and manufacturing technicians will be needed. These percentages command attention, but the absolute number of new jobs in each of these three categories will be as follows:

Table 8

AMERICAN ELECTRONICS ASSOCIATION PROJECTIONS— NEW TECHNICIANS NEEDED, 1983-87

Technicians	Number	% Increase
Robotics Technicians	777	785
Optics Technicians	670	201
CAD-CAM Technicians	726	164

AEA's projections are based on a survey of 815 companies, about a third of the total firms composing the electronics industry. In all, AEA estimates that 115,000 new jobs will be available in the industry during this period, most of them requiring training in vocational schools or community colleges.[39]

Forecasts made by BLS show that the number of high-tech jobs created over the next decade will be less than half of the 2 million jobs lost in manufacturing in the past 3 years. While high-tech industries, as defined by the BLS, will generate 10 times the number of jobs expected from the rest of the industry, they will be in traditional occupations, not technical ones. Fewer than one third will be for engineers and technicians, and the remainder will be managers, clerical workers, operators, and other factory workers. Further, the ratio of operators to engineers is projected to decline. According to Data Resources, Inc., high-tech industries will employ 3.2 machine operators for every engineer by 1993, down from 3.6 machine operators for every engineer in 1980.[40]

Job Shifts

One further note on this issue: Individuals who emphasize one extreme view or another of what is happening in the economy neglect to examine actual shifts in jobs. In fact, shifts in the proportion of jobs in specific categories are generally undramatic. The U.S. Department of Labor, for example, projects job changes in 9 broad job categories as follows:

Table 9

PERCENTAGE OF JOB CHANGES BY CATEGORY, 1980-1990[41]

Jobs	1980	1990	% Change
Professional, Technical Workers	16.1%	16.4%	+0.3
Managers	9.2	8.8	−0.4
Sales Workers	6.7	6.8	+0.1
Clerical Workers	18.5	18.7	+0.2
Craft Workers	12.1	12.2	+0.1
Machine Operators	13.9	13.6	−0.3
Laborers	5.7	5.6	−0.1
Service Workers	15.2	16.0	+0.8
Farm Workers	2.6	1.8	−0.8

The message in these numbers is clear: While the economy continues to undergo basic changes, the number of jobs generated by it that require high-tech skills—those in which community, technical, and junior colleges specialize—are modest compared with the total number of jobs in the labor market.

The Place of Community, Technical, and Junior Colleges

Precisely because of the dynamism evident in the national economy, the importance of community, technical, and junior colleges to the nation is clearer than it has ever been before. Two-year colleges have a crucial part to play in the national response to marketplace changes. The match is remarkably tight between what our nation needs at this point in its history and the services that community colleges provide. The match is captured graphically in the following statement:

> As the pace of technological change accelerates, competitive advantage depends on our ability to adapt, to apply new technologies to production, and to integrate human skills with new technologies . . . .Optimal shifting of human and machine resources will be required, as will the constant retraining of the workforce.[42]

The original Putting America Back to Work Task Force report called for the creation of a national human resource development policy, a tool for strengthening and coordinating national efforts to make the most of our human capital. Just how much we need such a policy is underscored by the fact that ". . .American firms spend an average of $3,300 per employee for capital and technology improvements versus only $300 per employee for worker training."[43] The conflict between this expenditure record and the contributions of human capital reported in a recent study are contrasted in the following notation:

> Changes in the labor quality through education equal the contribution of machine capital between 1948 and 1966, exceed machine capital by more than 60 percent between 1963 and 1973, make three times the contribution of machine capital between 1973 and 1978 and are projected to exceed the contribution of machine capital by 20 percent to 80 percent between 1980 and 1990.[44]

New Union Issues

Triggered by economic dislocations, workers and the unions that represent them are stressing different issues in their negotiated contracts from those they have emphasized in the past. The 1982 Ford Motor Company/United Auto Workers contract that established an $8-9 million training fund for workers is one example. The 1983 American Telephone & Telegraph Company (AT&T)/Brotherhood of Electrical Workers/Communications Workers of America/Telecommunications International national agreement is another. The latter agreement covers 675,000 union workers. It is unique and important because it does not stress wages and benefits as primary considerations.

Rather, the contract focus falls on job security and retraining provisions—both emphases stimulated by the increasing use of high-tech equipment in the industry (thus eliminating a good number of blue-collar jobs) and the divestiture of components of the Bell system required by law.

Under the AT&T agreement the company is creating a $36 million training fund accessible to workers who want to upgrade their skills and others who want to learn new skills because their current positions are being phased out or downgraded. Training programs need not be related specifically to workers' current jobs, as has been the case in the past. All employees with more than one year of experience are eligible for training funds. Further, course work must be done after or before working hours.

Another provision of the agreement covers terminated workers not near retirement age who lose their jobs because of increased automation. These workers are eligible for relocation and training or placement services expenses, up to $2,500 each.[45]

If—Then

When the significant pieces of this puzzle are joined, they create at least one clear picture—the importance of training.

- If the speed of technological change in the workplace continues at its present pace or if it accelerates even more;
- If the number of current worker displacements increases;
- If 90 percent of the current workforce will be working in 1990 and 75 percent of it in 2000;
- If more negotiated contracts between organized labor unions and firms include major job protection and training provisions (Ford Motor Company/UAW, AT&T/CWA, etc.);
- If new entrants in the workforce in the near future will be composed essentially of women and minorities;
- If the problems of illiteracy, alcoholism, and immigration continue to plague the workforce;
- If skill shortages continue to hamper industrial growth and productivity on a national scale and in specific geographical pockets; and
- If technological advances continue to influence American lives outside the workplace;

- Then it is crucial that the resources of the American education system—with a stress on the technical education available through community, technical, and junior colleges and on their intimacy with populations in their service districts—be fully applied to the problems, and that they be applied in cooperation and partnership with business and industry.

  It is also crucial that, at local, state, and regional levels, the significance of human resource development be understood, that strategies be created to speak to the comprehensive and coordinated application of human resource development programs, and that appropriate financial assets be released to implement these strategies.

What To Do

In more specific terms, here are a few suggestions concerning what community colleges might do in response to economic changes:

- Training for one job is not going to serve a worker all of his/her life. Foremost in any training program must be instruction that concentrates on *how to learn;* if possible, on *enjoying learning;* and on *making a commitment to learning throughout life.* An IBM executive recently stated that the firm's greatest need "...is for people who know how to learn. The shortage of these individuals has hurt, and will continue to hurt, the economy of this nation."

- Two-year colleges should provide at least a two-tier education/training package for students. The first tier should give students a broad-based background, with a stress on math and science principles and procedures, in a cluster of related occupational areas. Communications, analytical, and reasoning skills also should be given emphasis. The second tier should be a more targeted program aimed at one of the in-demand job clusters available in the community served by the college. The second tier of instruction also should be general, but not as general as the first tier. Job fine-tuning is done on the job; in fact, employers prefer to have new employees who have solid academic preparation so that they might more efficiently shape the workers for specific industry jobs. The first tier is important to provide the individual with a background that will permit him/her to flow with changes in the workplace and to move to new job opportunities in the economy. Such an education and training approach builds worker adaptability, flexibility, and productivity.

- Colleges should consider implementing two-plus-two programs. These programs are structured learning sequences that students begin in the last two years of high school and complete after two years of community college work. The programs provide a means of training highly skilled technologists, strong in basic math, science, communications, and problem-solving skills, and expert in one or a cluster of technical specialties. Such an arrangement has many advantages. Among them are:

  a. It can attract more good students to technical fields.

  b. It can eliminate the waste that sometimes characterizes the senior year of high school.

  c. It can produce graduates who possess the range of skills that business has been calling for: general skills in math, science, and communication; general learning skills that facilitate later learning required to keep pace with business changes; and specific technical skills that make the new employee, after some initial job-specific training at the firm, almost immediately productive.

  d. It can help elevate the status of technology jobs through stiffer job requirements, better students, and higher wages that will be demanded by graduates.

  e. It can eliminate the duplication that often occurs between programs offered at high schools and colleges, including the cost of equipment and laboratories that can be shared.

  f. It can contribute importantly to an ethos of cooperation that can lead to fuller community cooperation to advance economic development in the area.

  g. It can take many forms and shapes, consistent with the interests of the community and the purposes of the program.

  Only a handful of such programs currently exist in the U.S.

- The colleges ought to work closely with local business and industry officials to ensure that training programs are consistent with the needs, operations, and procedures of industry. Recently published resources detail hundreds of exemplary programs—see particularly Fenwick 1983, Jackman & Mahoney 1982, Mahoney 1982, Warmbrod and Faddis 1981 and 1983, and Parnell and Yarrington 1982.

- Colleges should be aware of and cooperate with other local service deliverers. Among the other deliverers that might be included are: military bases, private and public vocational high schools, private sector training programs, private vocational schools, correspondence schools, and apprenticeship programs. Another group that should be calculated into program considerations is the increasing number of individuals who train themselves for various occupations through self-study, tinkering, and consulting with neighbors or friends who are experts in technical areas. One of the important reasons for coordinating with these sources (or at least knowing what programs they are conducting) is to prevent training more people for a particular occupation than the local or regional economy can absorb.

- Colleges should consider the array of possible economic development activities in which they might participate. These activities include:

  a. Training and education programs in small business management, ownership, and/or employment—as a means of increasing the numbers of small businessess and the numbers of workers employed in them, and of increasing their potential for success.

  b. Technical assistance to firms in the form of technology transfer, employee needs assessments, alternative training programs for departments or divisions of firms, and planning implementation of organizational structures, among others.

  c. Training activities to prepare a new workforce for a company moving into an area.

  d. In-plant, job-specific training to: improve the efficiency of workers, prepare employees for new machines and/or procedures, retrain workers for job shifts and related changes, and improve management skills of supervisors and other administrative personnel, among others.

  e. Training and upgrading opportunities provided out-of-plant, on campus, or in other appropriate community locations.

  f. Generic professional continuing education programs for both managers and white/blue-collar workers as a means of keeping them up to pace with new technology and new concepts related to their fields.

g. Conferences, seminars, and workshops to create opportunities for professional and worker exchanges (information and perceptions) and to introduce audiences to leading community, state, regional, or national experts in important fields.

h. Training and education programs in new and emerging technologies, including the high technologies.

i. Assessing skills of displaced, furloughed, and about-to-be-displaced/furloughed workers, confirming their capacities, and recommending training programs.

j. Education and training opportunities for new entrants in the workforce, for minorities and women, and for the structurally unemployed, with emphasis on skills like job search, maintaining a job, and advancing in a job.

k. Partnerships with other economic development participants, particularly state and local offices, to encourage the relocation of new business in the area, expansion of existing business, and improved health of those firms that are experiencing difficulties.

l. Basic literacy programs, including adult basic education, bilingual education, and English as a Second Language, using adult volunteers and/or students when appropriate so that one-to-one instruction might be given. New learning technologies (computers, etc.), might be applied in these situations, too.

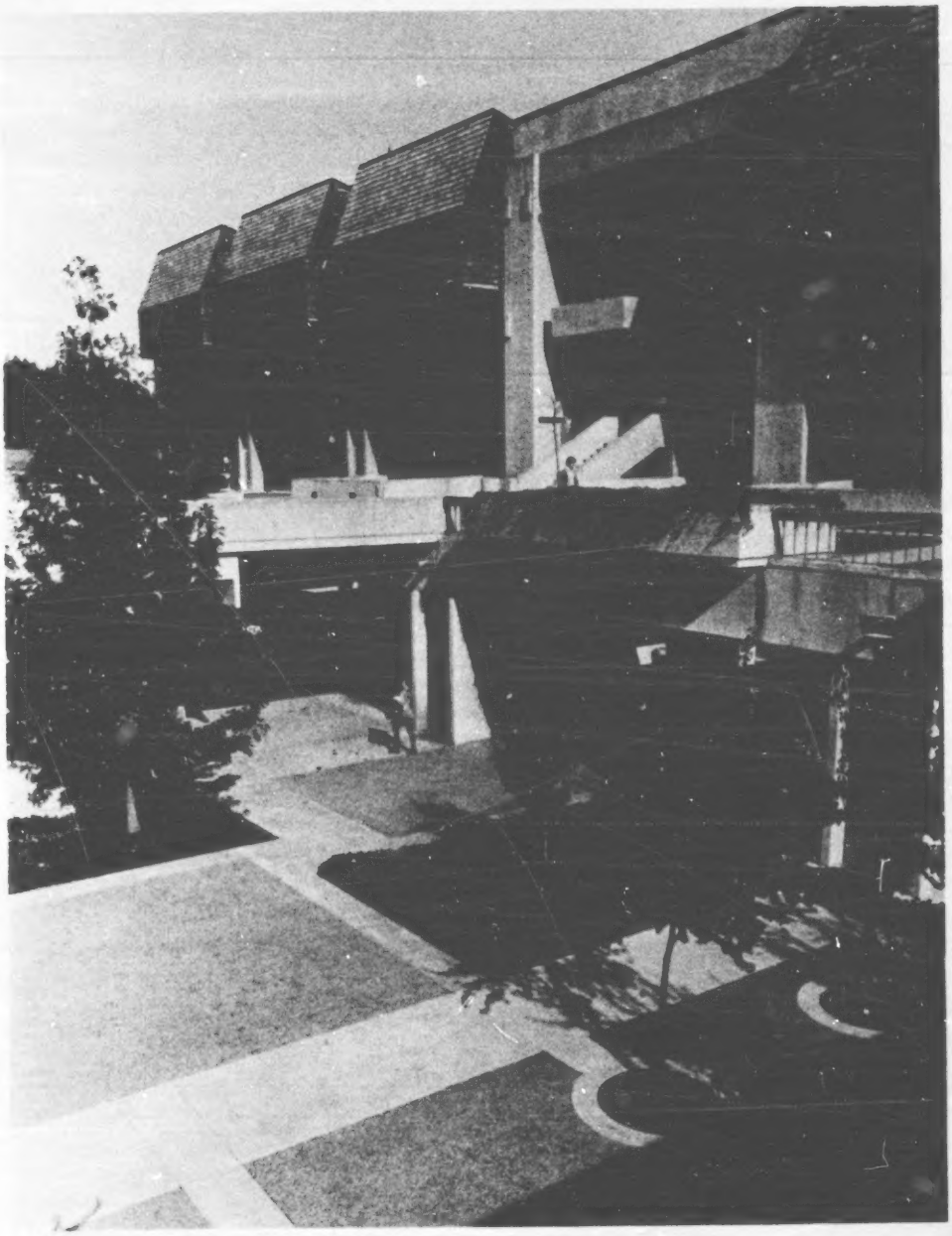
m. Guidance and counseling programs for those workers suffering from alcoholism or drug abuse.

n. Courses, seminars, workshops, and/or programs in international trade education, particularly for small- and medium-sized firms as a means of encouraging trade expansion. Included in this instruction should be foreign languages, cultural sensitivity, international business law, and marketing, among other topics.

- Colleges should focus on providing all students—no matter what academic course work they have chosen—with the opportunity to develop their math and science literacy. Advancing technology is affecting life outside the workplace as much as it is affecting jobs. To participate adequately in an increasingly science-based

society, it is important for all people to understand the rudiments of math and science. An informed citizenry will be able to better understand, for example, the possible effects of nuclear conflict (major or limited), and could thus help shape national policies relating to this issue. An informed citizenry could take better advantage of opportunities for personal learning, household control and management, and pleasure that small computers provide, and it would be able to handle the increasing number of transactions performed by automated machinery—like those employed by banks and department stores. Grounding in math and science also establishes a secure jumping-off piace for employment.

This list of possible college activities in economic and human resource development is not comprehensive. It does suggest, however, the sweep of possibilities for college involvement and it helps establish the base upon which even more activity might be conducted.



Lane Community College, Eugene, Oregon

Strategic Planning for Partnership-Building

The opportunities for community, technical, and junior colleges to participate more fully in economic and human resource development activities are nearly limitless—and their responsibilities to do so are substantial. Of particular importance is the need for colleges to engage purposefully in the complex web of policies and organizations that compose the economic development system in the districts they serve.

In the last few years a body of literature has been published that describes some model operational and program responses by colleges designed to place the institutions in the center of the local employment and training systems. Among the more significant of these publications are those produced by the American Association of Community and Junior Colleges, the National Center for Research in Vocational Education, and the National Alliance of Business. Titles and publication information are presented in the Annotated Bibliography of this volume.

Need For Planning

Despite the burgeoning literature on institutional activities in the employment and training realm, a gap remains—guidance for the development of a general institutional planning and management capability. Within such a capability, specific training programs and their delivery mechanisms, along with other related endeavors, can be thought out and implemented. Without such a general capability, institutions are far less likely to set the appropriate overall directions that must shape and guide detailed planning.

If community, technical, and junior colleges are to reach their full potential as partners in community economic development activities, they must move beyond their traditional patterns, examine their own organizational capacities, study the array of concerned organizations in the community, and find a place for themselves within the full panoply of entities existing there. They must do so in the midst of an economy that is characterized by change—rapid change—in policies, in people, in perceptions, in processes, in jobs, and in the relationships between and among all of these entities.

For community colleges to respond appropriately, with speed and practical behavior, they must adopt a planning approach that accounts for rapid change, tracks it, assesses it, and attempts to match its demands with the college's capability and mission. The principles of strategic planning fit the requirements here.

Before sketching some general ideas about how local colleges can apply strategic planning principles to advance their participation in economic development, a few notations about the role of national representative organizations need to be made.

National Organization Responsibilities

National representative organizations can help ensure that the efforts made at the local level are informed and efficient. Here are some services that national organizations (particularly AACJC and ACCT) can perform to aid the colleges:

- Work with other noneducational national groups (National League of Cities, National Governors' Association, International City Management Association, National Alliance of Business, American Society for Training and Development, and others) that have concerns about human resource and economic development issues. The purpose of these partnerships should be to establish a common set of principles and priorities that all might support in pushing for a unified national policy for employment and training. One of the first tasks in creating unity among these organizations ought to be to identify in clearer terms than now exist the linkage between economic development and human resource development. Another task ought to be to identify the particular interests of each organization and then to find a way to match community college interests with them.

  AACJC and ACCT have established and maintained these relationships over the years. In the past two or three years, because of the same economic pressures that spawned the Putting America Back to Work program, relationship-building between these organizations has intensified—particularly through legislative activities. For example, the two community college organizations have joined with the National Alliance of Business, the American Society for Training and Development, various labor organizations, the American Electronics Association, and several other significant national groups representing the business world to encourage the passage of legislation related to the Vocational-Technical Education Act; several tax bills that encourage workers to enroll in education and training programs to upgrade their skills as well as to provide incentives to the private sector to donate state-of-the-art equipment to postsecondary institutions; and math and science legislation designed to strengthen these programs in colleges and schools.

  The partnerships created by these joint efforts have underscored the core of common interests that these noneducational institutions have with community colleges. Partnerships on these issues can lead to future collaborations.

- Promote research that substantiates the linkage between economic and human resource development.
- Collect and distribute information on related experiences of local colleges.
- Continuously survey the economic scene for indications of developments and trends that can be shared with local colleges to assist them with their work.
- Encourage other noneducational organizations to include references to representatives from and information about community colleges in relevant policy documents, forums, conferences, and public meetings. Inclusion of these can influence the number and variety of partnerships possible at the local level.
- Maintain a directory of relevant organizations along with annotated bibliographies of the publications of each.

Primary Focus Is Local

National activities are important, but the most significant work is likely to be done at the local level. The fact is, employment and training services are largely planned, managed, and delivered locally, and it is principally in the local setting that partnerships are built and tested. If two-year community, technical, and junior colleges are to raise their profiles in economic development, it will be the result of strategies formulated and applied at the local level. There is more latitude for local institutions to set new directions in economic development as a result of both the federal move away from categorical funding and the growing receptivity to change locally.

Strategic planning is a relatively new management tool, designed to assist business and other organizations to respond more effectively to change. The strength of strategic planning is that it helps an organization maintain a dynamic balance between its resources and the world in which it operates (external environment). It assists an institution to take fullest advantage of opportunities for "business" and averts threats to its existence. It offers a systematic means of identifying and understanding the changes occurring outside the institution and a continuous means of adapting institutional responses to change. The key benefit of strategic planning is that it provides an organization with the kind of information and insight that permits it to alter its programs and services to match changing needs in its service district.

General Strategy

There are no distinct models that a college might emulate to build a general institutional strategy. Every institution is faced with a spectrum of choices.

Balance In Strategy

At one end is the go-it-alone strategy, focusing on direct marketing of training and retraining services to business, with no concern for the public employment and training system. At the other end is a strategy of active leadership in system improvement efforts. In practice, an institution will adopt most frequently a mixed strategy, combining direct marketing with some degree of participation in system building. The challenge for a college is to select the correct balance in light of institutional aims, resources, and the characteristics of the local environment.

There are strong arguments for moving toward the system-building end of the spectrum. The building of a more unified employment and training system at the state and local levels—characterized by comprehensive planning and coordinated service delivery—will ultimately benefit all of the system's participants, including two-year colleges. A balanced strategy will depend on a detailed and realistic understanding of the local system, including identification of major groups involved in it, the characteristics and interests of each, and the major relationships among the various actors.

The options available to local colleges are several, depending on the particular local situation. At a minimum, there is simple participation in the various planning and resource allocation mechanisms involved with the public employment and training system, particularly the Private Industry Council (PIC), provided under the Job Training Partnership Act (JTPA). If the local situation is conducive to more aggressive college involvement, an institution might want to adopt an active networking strategy aimed at promoting—rather than just participating in—the system. College leadership might look for opportunities to strengthen the system by working through it to design and deliver training and by publicly endorsing broader planning and management mechanisms. Another way for a college to show public support for wider community planning and coordination in employment and training is to serve as an administrative unit/agent for its local PIC, as many colleges are doing.

At the state level, local institutions might push for more integration and coordination through both the state two-year college governance bodies and statewide associations, and through membership on the State Job Coordinating Council, also provided in JTPA. At the least, local colleges should keep abreast of changes in state government policies, programs, and officials.

Aspects Of Planning Capability

There are three primary aspects of strategic capability in practice:

- Institutional leadership.
- Strategy formulation and implementation processes.
- Networking and alliance-building.

Leadership. The chances for successful strategy formulation and implementation are far better if college trustees, the chief executive, and executive staff are:

- Externally oriented, rather than inward-looking and preoccupied with internal management and control questions.
- Committed to openness and questioning, and supportive of creativity and the testing of new ideas.
- Willing to take risks and patient enough to forego short-term, "bottom-line" returns in the interest of fuller, long-term return efforts.
- Committed to an active, participatory team management style.
- Aware of the human dimension of strategizing and the limitations of planning.
- More interested in the achievement of strategic objectives than in the production of interim planning documentation.

Short-Term Vs. Long-Term

The style of college leadership will have more bearing on the quality of institutional strategies than the technical approaches to planning will have. No matter how sophisticated the planning technology, it can never overcome serious leadership deficiencies. The classic conflict is between short-term control and longer-term aims. If the chief executive officer states commitment to an open strategy formulation process and testing of new ideas, on the one hand, but constantly pressures staff to focus on day-to-day budget and control matters, on the other hand, strategy formulation will quickly lose credibility and momentum. An espoused commitment to pilot testing innovative approaches means nothing if all experiments are required to cover their costs in the short run.

Another potential barrier to effective strategic planning is the control orientation of many executives, often evidenced by a demand for so much detailed documentation that creative strategy formulation is suffocated.

A lack of staff capability can be a barrier, too. Being able to perceive opportunities in the environment and to fashion strategies to respond to them does not come naturally to managers. It involves a demanding learning process and considerable practice. Without adequate practice and

formal training activities, successful strategizing is far more difficult to realize. Appointing to key positions people who are oriented already toward creative planning may be the single most important means to build strategic capability.

Strategy formulation and implementation. Some basic steps in strategic planning are:

- **Scanning the environment:** The college must have a firm grasp of the significant community components that affect its mission and goals. Important initial decisions in scanning the environment involve: the scope of the scan (international, national, regional, state, and/or local); the demographic, economic, technological, cultural, political, and other factors to be scanned; and their implications for the college. A variety of other activities are important, including the determination of the time and other resources to be invested in ongoing information gathering, and the technologies to be employed.

- **Conducting a resource audit:** The college must have a good sense of itself, financially and operationally, as well as the capabilities of its personnel. The point of the resource analysis is to assess the organization's strengths and weaknesses, so a reasonable match between them and potential courses of action can be made.

- **Selecting strategic objectives:** The environmental scanning activity will point up opportunities for new services or new approaches to service delivery. Potential services are compared to the college's resources in order to determine the costs of implementing a particular activity. Strategic objectives are selected on the basis of rough cost/benefit analyses.

- **Selecting activities:** Strategies are formulated to implement selected activities. Major steps, accountabilities, deadlines, and resource requirements are identified.

- **Allocating resources:** The chief executive officer (and/or the board) specifically budget the first-year costs in the current or upcoming budget of the organization.

First Step: Establish Broad Goals

The first major step for any institution considering an active role in economic development within the employment and training system is to shape a global strategy, consisting of a mission statement that includes broad desired outcomes. Effectiveness over the long run will depend heavily upon the

college's clear vision of what it wants and at what resource level. A recent study by the National Center for Research in Vocational Education reports that global strategies were prepared by several successful community and technical colleges engaged in employment and training, and observes that by "specifying such services to industry in these documents, it becomes clear to everyone—both internal and external to the college—why the college is there and what it wants to accomplish."[46]

Strategy Characteristics

A global strategy is not a shopping list of goals and aspirations disconnected from costs. It is not likely to result from a board's perfunctory review of a staff-produced document. At its best, such a statement should be the product of an intensive board/executive work session, based on substantial staff preparation. A complete strategy will:

- Be based on a thorough understanding of the employment and training environment produced by a detailed environmental scan that assesses the implications of trends and conditions for the institution, and on a firm grasp of the institution's resource base—its financial position, its people, and its operational approach.
- Be based on a detailed understanding of the institutional costs as well as benefits (revenues, headcount, etc.) associated with taking certain directions.
- Define the "businesses" the institution intends to enter, in terms of markets, roles, and technical approaches.
- Present broad objectives that are measurable, involving such factors as numbers of customers, revenues generated, shares of particular markets, and the like.
- Establish clear rules of inclusion and exclusion to guide the institution in detailed planning and marketing. For example, are there certain kinds of training programs that the institution is not interested in providing even if it could, either because they do not fully use the institution's capability or do not generate sufficient revenues?
- Make a clear, firm commitment of institutional resources to pursue the strategy.

At first, a 1 1/2 to 2-day retreat of board and executive staff might be required to hammer out the institutional strategy, especially if board members have not worked with environmental data and implications to any extent

before. One way to ensure that tough, and sometimes sensitive, issues are faced squarely is to employ an outside facilitator to serve as devil's advocate, one who will challenge positions constantly.

Know Your Partners And Systems

The environmental scan prepared for such a global strategy session should go beyond standard economic, demographic, and social data and deal as well with the organizational/institutional environment of local employment and training systems. It is critical in choosing objectives and fashioning implementation strategies to have a detailed grasp of the roles of all organizations engaged in employment and training, somewhat akin to the for-profit sector's competitive analysis, and the dynamics of policy formulation and resource allocation. Most obvious is an inventory of who delivers what training to what clients/customers at what price through what funding mechanisms.

Some Questions

Beyond an institution's direct marketing to individual businesses, what are the major public funding conduits and what systems have been established statewide and locally to set goals, allocate resources, and coordinate service delivery?

How do these systems currently relate/cooperate?

What changes appear to be taking place in relationships among the different systems?

Many states are now engaging in more active economic development, including most often the use of the education and training systems to provide entry-level training as an incentive to business location or expansion. What programs are emerging in the state and what do they mean for institutional strategies? Is the State Job Training Coordinating Council under JTPA being mandated by the governor to play a strong role in comprehensive economic development planning and coordination, including training and retraining? If so, what are the implications for the institution's strategy? Has local business made a strong commitment to the local Private Industry Council? Is the Council likely to become an effective overall planning and coordinating body for training? If a local PIC has strong business leadership with a commitment to coordination and training regardless of funding source, then a local college will want to consider active participation in PIC deliberations as an explicit strategy element.

Global strategy development might be treated as a two-stage process to bring more expertise to bear on strategy formulation. A chief executive could empanel an external body with business representation to assess the environment

and suggest strategic directions for the institution. Even if such input is provided, however, it is important that the board and executive staff not cut corners in strategy formulation. The commitment resulting from the process cannot be considered firm unless the potential costs (in dollars, time, risks) and benefits have been examined in detail and a realistic sense of what will be required to achieve particular strategic goals has been achieved.

Implementation There is no single, preferred method for implementing global strategy. Examples of strategic implementation projects include:

- Application of a business marketing plan involving several institutional budget units, including public affairs, institutional research, and the training unit.
- Planning and construction of a high-tech skills training center.
- Participation with other local organizations in the upgrading of comprehensive employment and training planning in the community through a newly constituted Private Industry Council.
- Introduction of an innovative training program involving partnerships with one or more other local institutions.

In whatever fashion a particular institution chooses to manage its detailed employment and training strategies, it is critical that the detailed strategy formulation and revision process be continuous and flexible. It is this requirement, more than anything else, that distinguishes strategic planning from annual operational planning and budget preparation. Budgeting is necessarily cyclical, while strategy formulation must be continuous in order to respond to a continuously changing environment. Strategy modifications and new strategies will appear during the fiscal year, not once a year when the annual budget is adopted. How such ongoing strategy formulation is synchronized with the annual budget is an important mechanical question, but the control function of budgets must not be allowed to overwhelm the strategy development process.

Portfolio Management The strategic portfolio should be managed as explicitly as the investments portfolio of the institution. There will be instances when a strategy is so complex and interdepartmental in nature that a high-level staff task force may be charged with its day-to-day management. The oversight of the total employment and training package makes a sensible agenda for a high-level executive body, such as the president's cabinet.

Networking/relationship management. Beyond the choice of strategies, successful implementation frequently involves explicit attention to the effect of a college's actions on other organizations. It also involves knowing precisely what is needed from one or more other organizations in order to carry out a strategy. Thirdly, successful implementation requires the development of a strategy for managing relationships between the college and partner organizations. At its simplest, a partnership might join a college with one or more other organizations in the community to deliver a specific training program. In such a relationship, for example, the local employment services office might handle intake, organized labor might provide a training facility, and the college might deliver training and manage the placement function. Quite often, a college will find itself engaged in much more complex partnership-building, especially when dealing with public funding sources such as the Vocational-Technical Education Act, JTPA, and state-supported economic development programs.

Publicly Funded Programs

One advantage of working with and through state or local public funding mechanisms is the structure and process they offer for developing and managing partnerships. A possible disadvantage is the time that must be devoted to relationship management. Another disadvantage is the multiplicity of rules governing the delivery of training. There is, however, growing business participation in such programs and an expanding commitment to more effective coordination of activities. It is very likely that, over time, businesses will tend to see local PICs and other consortia arrangements as legitimate brokering devices and will be less receptive to direct marketing by educational institutions. An institution wanting JTPA, vocational education, and state financial support for training must establish and maintain relationships with the public systems already in place.

Generally, community, technical, and junior colleges intending to draw on public training resources should scan the appropriate systems in order to understand them. A general strategy will describe how the institution intends to "use" the particular system, be it JTPA, Vocational-Technical Education Act, or a state economic development program. There are obviously varying degrees of commitment and dependence.

An institution intending to rely most heavily on direct sales of training packages to business on a fee-for-service basis, and only incidentally to draw on JTPA funding when a particularly attractive opportunity arises, will invest much less time in building relationships with the local JTPA structure than an institution looking to JTPA as a major or even primary source of funding for job training.

Once the general objective has been established, the institution must then fashion a general implementation strategy describing how it must interact on an ongoing basis with the particular public system. In practical terms, are the desired outcomes from association with JTPA important enough to justify the chief executive's active service on the local Private Industry Council? Will it suffice to have a dean serve? Will it be enough merely to maintain open and cordial contact at the operational level with JTPA administrative staff and avoid participation in policy deliberation? The point is, a general strategy must clearly define both the desired outcomes of association and the relationship that must be established and maintained to achieve the outcomes. The greater the return desired, the more intense and higher-level the relationship must be.

Detailed networking strategies are required when particular training initiatives are being designed and implemented. Partnerships around specific programs will require unique strategies to manage successfully. In some instances, the colleges will not be the leading partner, but one of several coordinated, say, by the mayor's office. For example, the mayor of Portland, Oregon, took the initiative to design and carry out an agreement with an electronics firm to ensure its move to the city. The agreement committed the mayor to provide employee training in return for a commitment from the firm to use the city as a first source for nonprofessional employees:

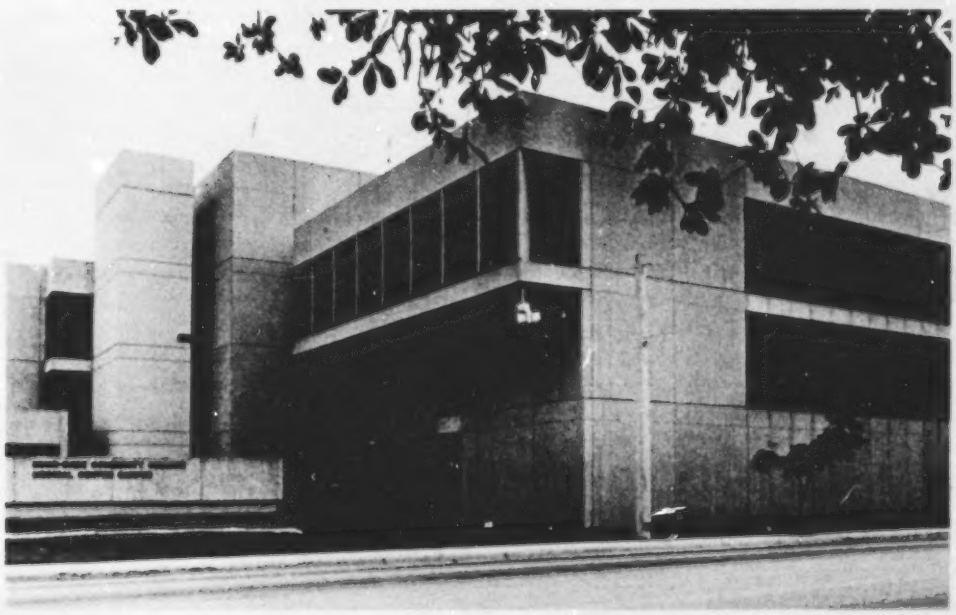
> The training of future employees was the "hook" that closed the deal. The city worked with the firm and a community college to carry out a customized training program....The program worked so well that the product of the school's production line was eventually purchased by the firm. Many of the trainers were hired to continue on-the-job training at the firm.[47]

Successful Linkage Principles

The study from which this example is taken suggests that successful linkage strategies depend upon the application of five principles:

- The necessity of public-private partnerships.
- The utilization of nonfiscal as well as fiscal tools.
- The need for specific issues or problems as a focus for linkage.
- The use of an organized problem-solving process as a strategy formulation vehicle.
- Negotiation and tradeoffs.

One message of this partnership study is that a well-conceived, methodical procedure must be established when building linkages, that "chewable" bites must be taken, and that partners must be open to negotiation and compromise. Relationships between the college and the other pertinent economic development actors in the community must be managed thoughtfully. Careless, haphazard treatment of partners will not ensure the kind of program success and long-term involvement sought by the institutions.



Miami-Dade Community College, Medical Center Campus, Miami, Florida

Footnotes

1. "Putting America Back to Work: A Concept Paper," American Association of Community and Junior Colleges (Washington, D.C.: 1982), pp. 7-8.
2. "26 Million Jobless in '82," *AFL-CIO News,* Volume 28, No. 32 (Washington, D.C.: August 13, 1983), p. 1.
3. Spencer Rich, "Only 38 Pct. of Jobless Get Benefits," *The Washington Post* (Washington, D.C.: August 12, 1983), p. C7.
4. Anthony P. Carnevale, *The Real Supply-Side Economics,* National Center for Research in Vocational Education, The Ohio State University, Occasional Paper No. 80 (Columbus, Ohio: January 1982), pp. 4-5.
5. Jane Seabury, "Debate Grows on Whether Deficits Stall Recovery," *The Washington Post* (Washington, D.C.: August 21, 1983), p. F22.
6. *Inflation: National Issues Forum,* prepared for the Domestic Policy Association by the Public Agenda Foundation (Dayton, Ohio: 1982), p. 30.
7. "The Search For a New Policy," *Business Week,* No. 2764 (New York, New York: November 8, 1982), pp. 108-112.
8. Jane Seabury, "Industry Uses 75.8% of Capacity," *The Washington Post* (Washington, D.C.: August 18, 1983), p. D1.
9. Stuart Auerbach, "Study Says Closings of Industrial Plants Topped 600 in 1982," *The Washington Post* (Washington, D.C.: July 19, 1983), p. D1.
10. *Inflation: National Issues Forum*, p. 37.
11. Ann Mariano, "Mortgage Delinquencies Rise, But Foreclosure Initiations Fall," *The Washington Post* (Washington, D.C.: June 1, 1983), p. C9.
12. Warren Brown, "Business Failures Level Off; But Plateau Remains High," *The Washington Post* (Washington, D.C.: March 4, 1984), p. H1.
13. Wendy Swallow, "Bankruptcy Used to Stall Foreclosures," *The Washington Post* (Washington, D.C.: March 17, 1984), p. E1.
14. Sally Jacobsen, "48 Bank Failures Most in 4 Decades," *The Washington Post* (Washington, D.C.: January 4, 1984), p. C6.

15. Anthony P. Carnevale, "The Case for Human Capital," prepared for the American Society for Training and Development and presented at the National Institute of Education Seminar on Industrial Policy (Washington, D.C.: September 29, 1981), p. 4.

16. *Ibid.*, p. 4.

17. *Wheels of Learning,* Associated Builders and Contractors, Inc. (Washington, D.C.: September 1980), p. 3.

18. "On Adult Learning," a release by the U.S. Department of Education, Office of Vocational and Adult Education (Washington, D.C.: 1983), p. 1. See also, Marvin Stone, "The Plague of Illiteracy," *U.S. News & World Report,* Volume 94, No. 7 (Washington, D.C.: February 1983), and *Functional Literacy and the Workplace,* American Council of Life Insurance (Washington, D.C.: 1983).

19. "Business/Industry Efforts in Remedial Education," American Association for Adult and Continuing Education (Washington, D.C.: 1983), pp. 1-2.

20. Pat Choate, *Retooling the American Work Force: Toward A National Training Strategy,* Northeast-Midwest Institute (Washington, D.C.: July 1982), p. 9.

21. *Ibid.*, p. 11.

22. Malcolm H. Morrison, "The Aging of the U.S. Population: Human Implications," *Monthly Labor Review* (Washington, D.C.: May 1983), pp. 14-18.

23. *Dislocated Workers: Issues and Federal Options*, Congress of the U.S., Congressional Budget Office (Washington, D.C.: July 1982), pp. ix-x.

24. *Ibid.*, p. ix.

25. Robert Lubar, "Why Unemployment Will Hang High," *Fortune Magazine* (Los Angeles, California: June 14, 1982), p. 116.

26. Of particular use for this issue are: *Dislocated Workers: Issues and Federal Options*, noted in (23) above; and *Responsiveness of Training Institutions to Changing Labor Market Demands*, edited by Robert E. Taylor, Howard Rosen, and Frank Pratzner, National Center for Research in Vocational Education, The Ohio State University (Columbus, Ohio: 1983).

27. M. Ross Boyle, "New Directions for Economic Development in An Information-Based Economy," McManis Associates, Inc. (Washington, D.C.: 1983), p. 9.

28. *Information Technology and Its Impact on American Education*, Congress of the United States, Office of Technology Assessment (Washington, D.C.: November 1982), p. 20.

29. Marc Bendick and Mary Lou Eagan, "Recycling America's Workers: Public and Private Approaches to Mid-Career Retraining," The Urban Institute (Washington, D.C.: April 1982), p. 16.

30. *The Impact of Technology on Labor in Five Industries*, Bulletin 2137, U.S. Department of Labor, Bureau of Labor Statistics (Washington, D.C.: December 1982), pp. 1-13.

31. H. Allan Hunt and Timothy L. Hunt, *Human Resource Implications of Robotics*, The W. E. Upjohn Institute for Employment Research (Kalamazoo, Michigan: 1983), p. 35.

32. *Ibid.*, p. 127.

33. *Ibid.*, p. 82.

34. Mark J. Johnson, "U.S. Foreign Trade Prices in 1982: Import Index Falls, Export Indexes Mixed," *Monthly Labor Review*, U.S. Department of Labor (Washington, D.C.: May 1983), p. 20-29.

35. Stuart Auerbach, "Steel 'Mini-Mills' Prosper Despite Industry's Woes," *The Washington Post* (Washington, D.C.: August 9, 1983), p. D7.

36. *Location of High Technology Firms and Regional Economic Development*, Congress of the United States, staff study prepared for the Subcommittee on Monetary and Fiscal Policy of the Joint Economic Committee (Washington, D.C.: June 1, 1982), p. 4.

37. Henry M. Levin and Russell W. Rumberger, "The Educational Implications of High Technology," Institute for Research on Educational Finance and Governance, School of Education, Stanford University, for the National Institute of Education (Washington, D.C.: 1983), p. 17.

38. "High Technology: A Primer," Wider Opportunities for Women, Inc. (Washington, D.C.: 1983), p. 4.

39. "Demand for Electronics Technicians to Jump 60 Percent," *Higher Education Daily*, Volume 11, No. 150 (Arlington, Virginia: August 12, 1983), pp. 3-4.

40. "America Rushes to High Tech for Growth," *Business Week*, No. 2783 (New York, New York: March 28, 1983), pp. 85-86.

41. Robert J. Samuelson, "High-Tech Job Binge a Fantasy," *The Washington Post* (Washington, D.C.: June 28, 1983), p. D1.

42. Anthony P. Carnevale, *Human Capital: A High Yield Corporate Investment*, American Society for Training and Development (Washington, D.C.: 1983), p. 32.

43. Anthony P. Carnevale and Harold Goldstein, *Employee Training: Its Changing Role and An Analysis of New Data*, American Society for Training and Development (Washington, D.C.: 1983), p. 15.

44. Carnevale, *Human Capital*, p. 41.

45. Caroline E. Mayer, "AT&T Contract Hailed as Landmark," *The Washington Post* (Washington, D.C.: August 24, 1983), p. D1.

46. Catharine P. Warmbrod and Constance R. Faddis, *Retraining and Upgrading Workers: A Guide for Postsecondary Educators*, The National Center for Research in Vocational Education, The Ohio State University (Columbus, Ohio: 1983), pp. 177-178, 190-191, and 198-199.

47. *The Employment/Economic Development Connection: New Tasks, New Roles, New Structures—A Guidebook*, National Alliance of Business (Washington, D.C.: April 1983), p. 57.

Annotated Bibliography

Sources on General College Economic Development Planning

Abram, R., *et al. Preparing for High Technology: Programs that Work, Book One.* Columbus, Ohio: National Center for Research in Vocational Education, The Ohio State University, 1982.

Describes ten case studies that provide a base for adaptation to local programs. Five case studies of industry and postsecondary cooperative efforts to train workers for high-technology occupations; identifies five postsecondary institutions that are developing programs for the preparation of students for high-tech occupations.

Blake, L. "Coming of Age." *Community and Junior College Journal.* Washington, D.C.: American Association of Community and Junior Colleges, May 1981.

Discusses the historical commitment of North Carolina's community colleges to vocational education and describes the system's efforts to train personnel for new and expanding industries. Lists the system's six goals for the future.

Carnevale, A. *Human Capital: A High Yield Corporate Investment.* Washington, D.C.: American Society for Training and Development, National Issues Series, 1983.

Quantifies human resource contributions to private sector productivity and argues for greater investment in expanding programs for human resources.

Etzioni, A. *An Immodest Agenda: Rebuilding America Before the 21st Century.* New York, New York: McGraw-Hill, 1983.

Analyzes U.S. economic circumstances and conditions; presents proposals to redirect national efforts for the purpose of strengthening the American economic position.

Faddis, C., *et al. Preparing for High Technology: Strategies for Change, Book Two.* Columbus, Ohio: National Center for Research in Vocational Education, The Ohio State University, 1982.

Discusses the impact of new technologies in the marketplace; how business, industry, and program developers can cooperate to respond successfully to changing needs and what factors should be considered.

Grede, J. "Changing Form and Focus of Occupational Education." *New Directions for Community Colleges*, Spring 1981, 9(1), 1-10.

Reviews the development of occupational education in community colleges. Looks at efforts to meet the training needs of business and industry, public agencies, unions, and the military.

Jackson, R. "An Analysis of Corporate-Community College Relations." *Community Services Catalyst*, Summer 1981, 7(3), 13-15.

Proposes that sound working relationships between community colleges and business/industry are possible. Focuses on the causes of poor relationships, factors in devising training plans, principles for working with corporate representatives, and four benefits of providing training for business and industry.

Korim, A. "Challenges Facing Community Colleges in the 1980s." *New Directions for Community Colleges*, Spring 1981, 9(1), 11-20.

Recommends areas for improvement in community colleges, including granting credit for experiential learning, serving as educational brokers and collaborating with community agencies, strengthening student services, and increasing interest in national legislation.

Levin, H. M., and R. Rumberger. "The Educational Implications of High Technology." Stanford, California: Institute for Research on Educational Finance and Governance, Stanford University, 1983.

Presents evidence that high technology will not dominate America's economic future; rather, the expansion of the lowest skilled jobs in the economy will vastly outstrip the growth of high technology ones; the educational system should strengthen the analytical and communicative skills of students because such skills will prepare them for political, economic, social, and cultural change.

Long, J., and C. Warmbrod. *Preparing for High Technology: A Guide for Community Colleges, Book Three*. Columbus, Ohio: National Center for Research in Vocational Education, The Ohio State University, 1982.

Describes ways postsecondary institutions can adapt occupational programs to rapid advances of high technology. Identifies successful practices and makes recommendations for increasing and improving active participation with business and industry to use advanced technology.

Rinehart, R. "Industry-College Cooperation: New Components, Barriers and Strategies." Paper presented at the 62nd Annual Convention Meeting of the American Association of Community and Junior Colleges, April 1982.

Identifies a variety of linkage components that can help build and maintain effective relationships between the worlds of work and education, barriers to the development of such relationships, and techniques for overcoming the barriers.

Sources on Strategic Planning

Eadie, D. C. "Putting a Powerful Tool to Practical Use: The Application of Strategic Planning in the Public Sector." *Public Administration Review,* September/October 1983.

Describes how the planning field is changing, shows the applicability of strategic planning in the public sphere, and provides case examples.

Eadie, D. C. "Strategic Planning: Ryhme and Reason in a Nutshell." *Community and Junior College Journal.* Washington, D.C.: American Association of Community and Junior Colleges, December-January 1982-83.

Provides a case history of the application of strategic planning in the economic development sphere, focusing on networking.

Eadie, D. C., G. C. Brown, and N. M. Ellison. "Incremental Strategic Planning: A Creative Adaptation." *Planning Review,* May 1982.

Offers a detailed account of the application of strategic planning in a large, urban community college, with an incremental alternative to traditional "master planning" approaches.

Keller, G. *Academic Strategy: The Management Revolution in American Education.* Baltimore, Maryland: The Johns Hopkins University Press, 1983.

Examines the application of strategic planning in higher education; provides detailed guidance in the use of the techniques.

King, W. R., and D. Cleland. *Strategic Planning and Policy.* New York, New York: Van Nostrand Reinhold, 1978

Offers practical advice on the application of strategic planning, principally for a business audience, but with some attention to the nonprivate and public sectors.

Olsen, J. B., and D. C. Eadie. *The Game Plan: Governance With Foresight.* Washington, D.C.: Council of State Planning Agencies, 1982.

Introduces the applications of strategic planning in the public sector and focuses on the practical use of strategic planning in addressing public issues.

Sources on Community College/Business/Labor Partnerships

Bundy, S. "Ford Retooling: Reschooling." *Community and Junior College Journal.* Washington, D.C.: American Association of Community and Junior Colleges, December-January 1982-83.

Outlines the objectives and components of the United Auto Worker-Ford Motor Company National Development and Training Center.

Eliason, C. "Small Business, Big Opportunities." *Community and Junior College Journal.* Washington, D.C.: American Association of Community and Junior Colleges, December-January 1982-83.

Cites activities of the American Association of Community and Junior Colleges' National Small Business Training Network; notes outreach activities, business-related training models, curriculum and delivery systems, modifications, and efforts to strengthen individual institution's work in the small business training field.

Ellison, N. M. "BICCC: An Important Community College Initiative." A paper presented at the Business-Industry Coalition Seminar in Topeka, Kansas, January 1983.

Suggests how two-year colleges, business, government, and labor together can ensure the availability of responsive, high quality job training and retraining as an essential element of economic revitalization.

Koltai, L. "Improving College-Business Alliances." *Community Services Catalyst*, Spring 1982, 12(2), 9-13.

Focuses on three aspects of vocational education—the need for strong, innovative business-responsive programs meeting individual, industrial, and national needs; community college programs related to new teaching/learning experiences and/or new approaches to the traditional flow between education and work; and recommendations for the future.

Palmer, J. "College-Industry Cooperation." *Community Services Catalyst*, Winter 1982, 12(1), 28-31.

Provides citations and abstracts from documents in the ERIC junior college collection dealing with community college efforts to meet the needs of their service districts through cooperative educational ventures with external organizations and agencies.

Watche, R. "Partnership Vital to High Tech." *Community and Junior College Journal*. Washington, D.C.: American Association of Community and Junior Colleges, December-January 1982-83.

Urges colleges to become knowledgeable about the needs of high technology industries to provide training programs for new occupations.

Wygal, B. "Assuring Continuity for the Complex 80's." *Community Services Catalyst*, Winter 1982, 12(1), 12-16.

Discusses the roles of community colleges and their leaders to help individuals and communities manage change.

Sources on Community College Program Models

Fenwick, D., ed. *Directory of Campus-Business Linkages: Education and Business Prospering Together*. Washington, D.C.: MacMillan Publishers, 1983.

Profiles 290 college-business program partnerships involving both two-year and four-year institutions with fuller case studies of six additional exemplary efforts.

Mahoney, J. *Community College Centers for Contracted Programs: A Sequel to Shoulders to the Wheel*. Washington, D.C.: American Association of Community and Junior Colleges, 1982.

Provides 15 case models of two-year college centers responsible for initiating and coordinating program contacts with local business and industry, with analysis of their development and concerns.

Mahoney, J., and M. J. Jackman. *Shoulders to the Wheel: Energy-Related College/Business Cooperative Agreements*. Washington, D.C.: American Association of Community and Junior Colleges, 1982.

Provides 40 case studies and program descriptions of community college/business cooperative programming, with analysis of program characteristics and costs/benefits.

Parnell, D., and R. Yarrington. *Proven Partners: Business, Labor, and Community Colleges*. Washington, D.C.: American Association of Community and Junior Colleges, 1982.

Describes 20 model college/business joint programs, with references to 20 additional programs and an introduction that sets in broad terms the national context of such programs.

Warmbrod, C., and C. Faddis *Retraining and Upgrading Workers: A Guide for Postsecondary Educators*. Columbus, Ohio: The National Center for Research in Vocational Education, The Ohio State University, 1983.

Offers five comprehensive case studies of community and technical colleges with programs aimed at providing workers affected by changing economic conditions with opportunities for retraining and upgrading training.

Warmbrod, C., J. Persavich, and D. L'Angelle. *Sharing Resources: Postsecondary Education and Industry Cooperation*. Columbus, Ohio: The National Center for Research in Vocational Education, The Ohio State University, 1981.

Examines 219 exemplary college programs that span a range of models from apprenticeship to economic development services, with program implementation guidelines.

Sources on Employment and Training Programs

Carnevale, A. "Getting the Most from Our Training Systems." *Vocational Education Journal*, January-February 1983, 58(1), 24-27.

Presents proposition that public and private training providers deliver efficient training somewhere, but no single provider does it everywhere. Suggests the system could be improved by giving individuals and employers the means—cash grants, tax subsidies, or loans—to choose among available offerings.

Choate, P. *Retooling the American Work Force: Toward A National Training Strategy*. Washington, D.C.: Northeast-Midwest Institute, 1982.

Outlines critical employment and training issues, including the growing number of displaced workers and the need to shape training programs to prepare the workforce for future jobs. Outlines a national training program that includes vocational and remedial education, designs for training programs to enable workers to enter and remain in the labor market, and public and private sector participation.

"Economic Development and Job Creation." Washington, D.C.: National Alliance of Business, October 1983.

Collects 16 bulletins describing in detail programs that link the use of public resources to stimulate economic growth in order to create jobs. Also includes: (1) results of NAB survey of 50 states and localities on the linkages between job training and economic development and (2) NAB survey paper using the Job Training Partnership Act to further local economic development.

"Job Creation Through Economic Development: The Role of Private Industry Councils." Washington, D.C.: National Alliance of Business, January 1982.

Offers PICs a system to work with economic development agencies and private sector economic developers to create the maximum number of job opportunities for the economically disadvantaged.

"Public-Private Multipartite Governance Structures at the State and Local Levels." Washington, D.C.: National Alliance of Business, 1982.

Observes how different organizational partners might affect the degree of accountability and sense of ownership felt by participants in employment, training, economic development, and related fields.

Sources on State Planning for Economic Development and Job Training

Campbell, D., and D. M. Faircloth. "State Models for Economic Development." *Community and Junior College Journal.* Washington, D.C.: American Association of Community and Junior Colleges, April 1982.

Examines the community college's role in state economic development, describing the North Carolina model that teams community colleges and the department of commerce to ensure adequate funding. Encourages similar linkages for other states to provide resources for occupational training.

Clary, J., and M. J. Iverson. "Maximizing Responsiveness to Industry by North Carolina Technical and Community Colleges." Occupational Education Research Project. Final Technical Report. Raleigh, North Carolina: North Carolina State University, Department of Occupational Education, 1983.

Describes the elements that affect an institution's ability to respond to the training needs of industry.

Liston, E. J., and C. Ward. "The Role of the Community College of Rhode Island in the Economic Revival of the State." Report of the Rhode Island Strategic Development Commission, November 1983.

Summarizes a comprehensive program for economic and human resource development for Rhode Island (Greenhouse Compact) and the role community colleges will play in developing specialized training programs and providing programs for specific populations.

Packwood, G., *et al.* "The Impact of Community Colleges on Michigan and Its Economy: Preliminary Technical Report." June 1982.

Describes the collective impact of Michigan's 29 public community colleges on the state's economy with an emphasis on human capital as an economic resource rather than on institutional spending and investment.

Parsons, M. "Technology Transfer: Programs, Procedures and Personnel." Position paper presented at the 63rd Annual Convention of the American Association of Community and Junior Colleges, April 1983.

Discusses the role of community colleges in selecting delivery systems to transfer innovations of business and industry.

Tyree, L., and N. Cusner. "Linking Community Colleges with Economic Development in Florida." ISHE Fellows Program Research Report. Tallahassee, Florida: Florida State University, Tallahassee Institute for Studies in Higher Education, 1982

Discusses the relationship between business/industry and education in Florida with special emphasis on the role of community colleges in fostering and promoting economic development in the state.

Wilson, J. "A Study of the Relationship Between Postsecondary Education and Economic Development in Selected States." Phoenix, Arizona: Arizona Commission for Postsecondary Education and Office of Economic Planning and Development, September 1981.

Surveys the working relationships in selected states between economic development activities and postsecondary education and training.

ERIC® CLEARINGHOUSE FOR
JUNIOR COLLEGES
UNIVERSITY OF CALIFORNIA

JUL 27 1984

8118 Math-Sciences Building
Los Angeles, California 90024